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## Contents for 28 January 1928

DRAWING FROM SKETCH BOOK OF GIUSEPPE FEATALI .. .. .	Frontispiece
ADDRESS TO STUDENTS. By the President, Mr. Walter Tapper, A.R.A. .. .. .	171
VOTE OF THANKS .. .. .	174
R.I.B.A. PRIZES AND STUDENTSHIPS. Illustrations of the Winning Designs .. .. .	175
CHINESE ARCHITECTURE. By Arnold Silcock .. .. .	180
THE ORIGIN OF THE PENDENTIVE. By Professor Ramsay Traquair .. .. .	185
REVIEW :	
GERMAN BAROQUE ART. By Martin S. Briggs .. .. .	187
CORRESPONDENCE :	
ARCHITECTS AND ADVERTISING. By W. E. Watson.. .. .	189
INFORMAL DISCUSSIONS AT BUSINESS MEETINGS. By William Davidson and Sydney Tatchell .. .. .	189
PARTY WALL AND OTHER AWARDS. By Sydney Tatchell .. .. .	189
THE ARTISTS' GENERAL BENEVOLENT INSTITUTION. By H. P. Cart de Lafontaine .. .. .	189
THOMAS HARDY. By R. D. .. .. .	190
STANDARD BUILDING CONTRACT .. .. .	191
THE HANDBOOK OF ARCHITECTURAL PRACTICE .. .. .	192
NOTES ON ALTERNATIVE METHODS OF CONSTRUCTION .. .. .	197
PRESERVATION OF LONDON SQUARES .. .. .	199
ALLIED SOCIETIES :	
THE ESSEX SOCIETY OF ARCHITECTS .. .. .	200
GLOUCESTERSHIRE ARCHITECTURAL ASSOCIATION .. .. .	201
OBITUARY :	
J. A. HOUSTON .. .. .	201
JOHN JACKSON .. .. .	201
EXAMINATIONS .. .. .	201
NOTICES .. .. .	202
COMPETITIONS .. .. .	203
MEMBERS' COLUMN .. .. .	203
MINUTES .. .. .	203
A.B.S. HOUSE PURCHASE SCHEME .. .. .	204



FROM THE SKETCH BOOK OF GIUSEPPE FFATALI

Note by Professor T. L. Donaldson in the Sketch Book

"Eighty drawings for Scenes, Altars, etc., and, apparently, from the letter on the back of one of them, made about the year 1713. It is written by a certain Giuseppe ffatali of Cremona to his son, who from this circumstance might be supposed to be the artist who drew the greater part of the Sketches. Some seem to be by other hands, being executed in a different style in Indian ink."—Thos. L. Donaldson.

R.I.B.A. Collection



## Address to Students

BY THE PRESIDENT, MR. WALTER TAPPER, A.R.A.

*[Read at the Royal Institute of British Architects, on Monday, 23 January 1928]*

**S**TUDENTS,—It is the custom of the Institute for the President to address the students when presenting the prizes for the work they have done. When one thinks of the many addresses delivered on such occasions, one may be fairly certain that everything worth saying has been said, and it becomes increasingly difficult to add anything with advantage. Still I must endeavour to do so. A keen criticism of the various subjects was given by Mr. Sullivan a short time since, and I hope the students will agree with me that it was one really worth having. It was, of course, severe, as adverse criticism must be if it is sincere, but it was also kindly. Mr. Sullivan realises, as we all do, the immense amount of time and trouble the students have given to their work.

Let me first of all congratulate the students who are prize-winners, and to those not so fortunate say a few words of encouragement. To work, and to have done your best, brings its own reward and happiness. Of that you may be sure. We all can give instances of men who, in their young days, were never fortunate in winning prizes, yet later have done excellent work, and have been happy and contented. Therefore, I say, do not be cast down. If you persevere in your work and love it, you will get your reward in some form or another. We

cannot attach too much importance to occasions such as this, first of all because they are directly concerned with the work of the younger men, with whom the future of Architecture lies, and secondly because they give us an opportunity of seeing the practical result of a system of education with which this Institute is directly concerned. Our Board of Architectural Education deals with the curricula adopted by all the recognised architectural schools of the country, and we see on such nights as this, as I say, the practical results of their endeavours. Architectural Education to-day is a vastly different matter from what it was not so many years ago. Then it was more or less a haphazard affair. The boy was articled to an architect for some years; at the expiration of his articles he either continued in the same office, or went to another as an Improver for a year or two. He then became an Assistant. During this period he qualified by voluntary examination as an Associate of the Institute, and finally began practising as a full-blown Architect, and a very anxious time he had, as we all know, notwithstanding the exhilaration of having a shot at any competition which happened to be going. It can be easily imagined, with such a system, how much depended on the architect to whom he was articled, and even more so on the

pupil himself. A busy practising architect had little time in which to give him personal attention, although there are plenty of instances to the contrary. In any case, there was little spoon-feeding, and the pupil, if it was an office where good work was being done, and he was determined to make good, picked up—and I use the term advisedly—all sorts of information, which he found of inestimable value when starting his own practice. Sometimes at the end of his articles he took on the job of clerk of the works, gaining not only practical knowledge of building, but also the friendship of the workmen, from whom he learnt much. In my opinion, and in the opinion of many others, this was an admirable training, provided that the office was one in which architecture was well understood. The work of the men so trained, many of whom we have with us to-day, proves this without doubt. In addition to the routine work of such an office, it was a common thing for men to work at the Association and Academy schools (the only existing architectural schools of the time of which I am speaking) in the evenings and to sketch and measure old work at South Kensington. The holidays were spent on sketching tours. A keen man, bent on making himself efficient, had little time for play, which may or may not have been a misfortune. The published sketch books of the time, such as the John o' Groat's, Spring Gardens, and that of the Architectural Association, show the excellent work and sound draughtsmanship of the student of those days. I cannot help regretting that nothing of the kind is being published to-day, for they were, without doubt, stimulating to the student. The publication of books of photographs is not a good substitute—quite the contrary. As a striking exception in this connection, I should like to congratulate Mr. Poley on the survey of St. Paul's Cathedral, which he has recently published. Such years of devoted labour in making such beautiful drawings of this fine building deserve more than a word of praise on such an occasion. I hope our students may profit by such an object lesson. Such a training, as I have said, was all very well, given good conditions. Unfortunately, such were not general, and there is little doubt that the average training of the student in those days was not training at all in the best sense. Looking back, one realises that there was a great deal of wasted effort, and very little guidance. That the system obtaining to-day is absolutely necessary goes without

saying, and most of us agree in thinking that our students are very fortunate.

In recent years the aim of the Institute in its educational reforms has been to make the training of architects more intelligible, and I think you will all agree, looking round the walls of this room, that it is meeting with the success it deserves. Much has been done, and there is still more to be done. For instance, I venture to think it imperative that the students should be brought into closer connection with the actual building. We know, of course, they are given opportunities for visiting buildings in progress, but that is not quite equal to the advantage given by the old system, where the pupil visited buildings for which he had helped to prepare drawings. I know that the schools, in order to make up for this lack of practical training, have made it compulsory that students should spend a certain definite time in offices before they can take their diploma. If I may venture to make a suggestion to the masters of our schools, I would say, encourage the students by every means in your power to found themselves in the best traditions of the past. Teach them all there is to be taught in this respect, so that later they may not fail for the want of knowledge of the principles and traditions which have gone to the making of great architecture. It is because of this that I attach the greatest value to the measured drawing subject, for which a prize is given. There is no better way to learn the traditions of our art. You must, of course, measure with intelligence, not merely with the idea of getting a record of a fine building, but in order to master the meaning of it, whether it be as regards plan or general proportions, detail or construction. This is all I have to say, especially to our students, and now may I venture to make a few remarks on general education, in so far as it concerns them and architecture.

In former days the Patrons of Architecture and the fine arts were the Aristocrats, who had sufficient knowledge of the subject to be able to discriminate between the good and the bad; at the same time the definite traditions of building were generally understood and followed. To-day the Patrons are the people, and it is with them that the future of architecture lies. I should have no misgivings concerning the part democracy is to play provided the study of the fine arts formed part of its general education. When all is said and done, and notwithstanding much vulgarity, the age in which we



live is really enlightened. The mass of the people are thinking more deeply concerning many things, including architecture, but they need leading into the right channels, and this, I venture to think, can best be done in our elementary and secondary schools, in our public schools and universities. I am not suggesting that the masters should know the technicalities of our art, but that they should recognise how all-important architecture is, and, if properly understood, what an influence for good it can be to the nation. To know this and to teach it is, in my opinion, the only hope of better things. And in this I cannot but think of the many fine examples of architecture in this country, which should be of the greatest value. For example, take our public schools; two, Eton and Winchester, instantly come to mind. The history of England is architecturally expressed on their walls. Do the masters call attention to this? Do they tell the boys that these buildings express most of the human virtues? Greater object lessons in architecture, of real value in helping to form the boys' character, cannot well be found. Or, again, take the village schools. Are the children taught to be observant of the beautiful cottage architecture that so many villages possess, or the architectural qualities of the village churches? All such buildings invariably express the things which go to the making of a great people. Men from our universities, well educated in the ordinary sense, very often become trustees of the lovely churches up and down the country. Would these buildings have suffered, as they have, if the study of the fine arts had formed part of such men's general education? Would not these gentlemen themselves have been better for this knowledge? I think so. Education does not solely consist of book learning. Our cathedrals and churches, our manor houses and cottages, are sermons and lessons in stone, and should be appreciated from that point of view. So I would ask those responsible for education whether they cannot be made of more direct use for educational purposes. If we are to save the country from the pollution which is going on—and there is little time to lose—it behoves them to bestir themselves and see that our children

are taught the value of architecture. Education has not yet come into its own with the multitude. It must be some time before we get an educated democracy. In the meantime what is to be done? Here we architects may be useful. All we can hope to do is to keep the rushlight burning. We must all, every one of us, if we are to be sound guides, agree on first principles. We must set ourselves to recapture the great traditions of our past, that we may speak with one voice so that the minds of the people will not become confused. This to-day is our great need if we are to be a real help. The powerful aid of the press should be invoked and propaganda of every kind, such as lectures in our towns and villages on the value of the fine arts as an influence for good, should be given. Here I should wish to voice the thanks of the Institute to Mr. and Mrs. Quennell for the admirable architectural lectures which they gave to children during the Christmas vacation. They were indeed valuable, and I sincerely hope they may be followed by others in due course. The spoliation of the country side does not arise because the people wish it: they do not desire ignoble or mediocre homes. It has come because the people have not received the education necessary for an appreciation of better things. There is much commendable civic pride in our towns, but not enough, and what there is is of little use unless it has this educational backing. Architecture interpenetrates our lives, and it is imperative that it shall be good if the nation is to progress. Just as we are all the better if the sun shines, or when we are admiring Nature's loveliness, so are we the better people for great architecture. It speaks to us intimately every moment of our lives, telling us so plainly the great and fundamental truths. Do not let us think of architecture solely in terms of building, but remember that it has real value as one of the many aids to the formation of fine character. We architects have a great responsibility, for our work helps to raise or lower the standard of life; we are doing and shall be enabled to do more to raise it if the people are taught that architecture is vital to their well-being.

## Vote of Thanks to the President

THE HONORARY SECRETARY, MR. E. STANLEY HALL [F.], IN THE CHAIR.

Mr. R. F. CHOLMELEY, C.B.E., in moving the vote of thanks, said :—

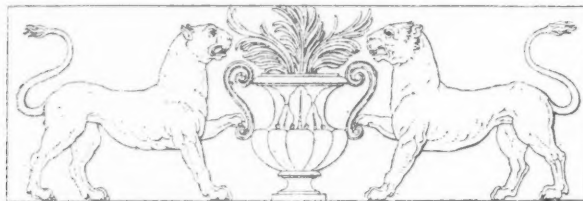
I particularly want to show my gratitude for those observations which you, Sir, made on the place of an understanding of architecture, not as a technical study, but what architecture may mean to the ordinary person. We are doing something in the schools. I have very little doubt, for instance, that a Winchester boy is taught a good deal about the inspiring history and nature of the buildings in which he lives, and I am quite certain that in many of the schools in London a great deal is done to teach the pupils what certain parts of the architecture of London might mean to them. It is when I come to think what happens when people have houses built for them that I am sometimes inclined to despair. It is true that the patrons of the architect nowadays are the people, but there are so many people who get in the way between the architect and the people. It is not fair to put it all down, I think, to the iniquities of the speculative builder; he is no worse, after all, than a good many other speculative persons; but what is it that has made so many people who are perfectly capable of appreciating something better entirely contented with a house of any sort of shape to live in? I feel, as an old schoolmaster, that you ought to begin in the schools, and you ought to begin by stimulating, as all good education begins by stimulating, a profound discontent with the conditions in which nine-tenths of the people have to live. Unless you can make them thoroughly discontented with buildings that are out of proportion and overloaded with ridiculous and offensive ornament in such a manner as to conceal all their defects, unless you can make them angry about it, you will not get very far. It is the business of all whom this matter concerns to stir up and keep going a divine discontent with anything less than the best we can have, and to tell the people at the same time that this is not a matter of the longest

pocket. Some of the worst buildings that ever were put up, I suppose, have been some of the most expensive, and some of the best buildings have been least expensive. If somehow or other the people could be taught quite young, and be taught, by living among and, if possible, in buildings that are worth some kind of consideration, that beauty is one of the necessities of life, and that it is one of the cheapest and most easily won, then I think those who are engaged in the education of the young would have done more than perhaps they are doing to-day, but not more than I think they hope and desire to do.

Professor W. ROTHENSTEIN, Principal of the Royal College of Art, in seconding the vote of thanks, said: My own feeling is that the best way to improve public taste is to put up as many good buildings as possible. My sympathies, Sir, are with your own admirable institutions, such as the Architectural Association, which is giving a kind of technical education, which seems to me to be extraordinarily rare in this country. I was particularly struck when you read out the name of a very dear and deeply regretted old friend, Thomas Hardy, to find that he had won a prize here, and I thought of other friends, Eric Gill the sculptor, Gimson, and many other excellent artists who started by being architects. It seems to me that the profession of architecture is so admirable that if you fail to be good architects you become great writers and great painters.

(The Vote of Thanks was carried by acclamation.)

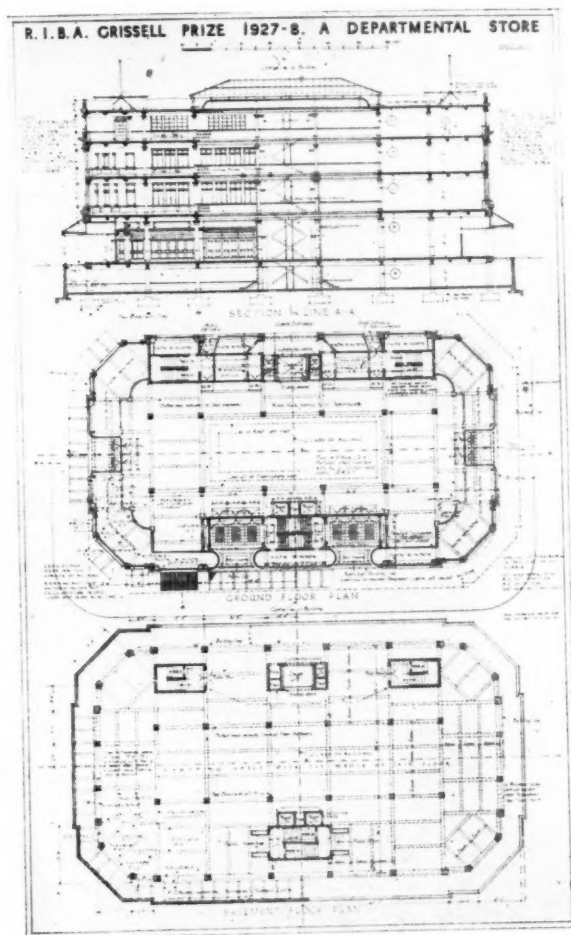
The PRESIDENT, in reply, said: I am quite sure in my own mind that you must do as Professor Rothenstein says; you must have good architects to put up fine buildings, and they will help the people to understand. Of course it is a question of which is the horse and which is the cart. My own opinion is that you must have an educated people first of all. I should put that first, and I should put the architect second, although I quite realise the value of the second man.



## R.I.B.A. Prizes and Studentships

### ILLUSTRATIONS OF THE WINNING DESIGNS

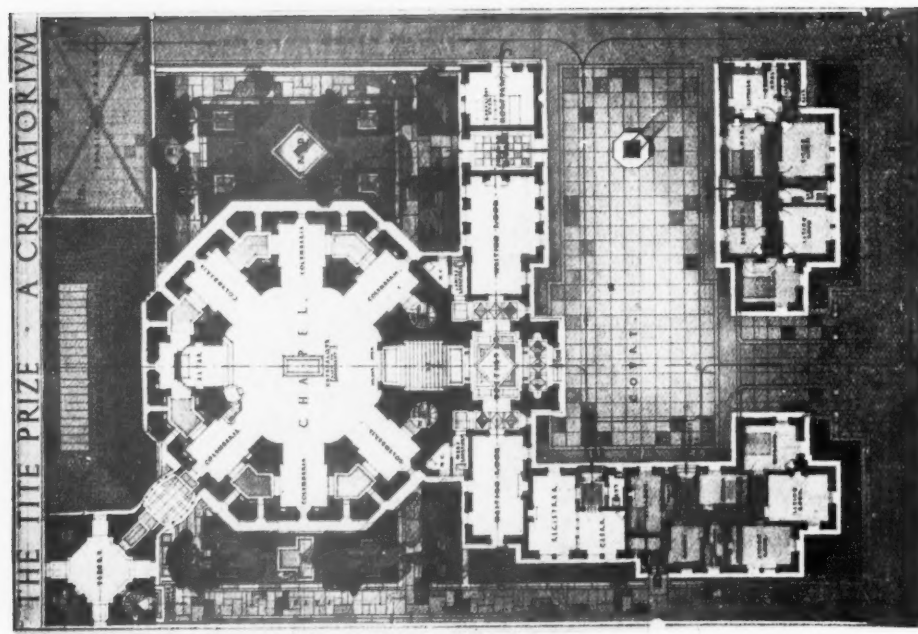
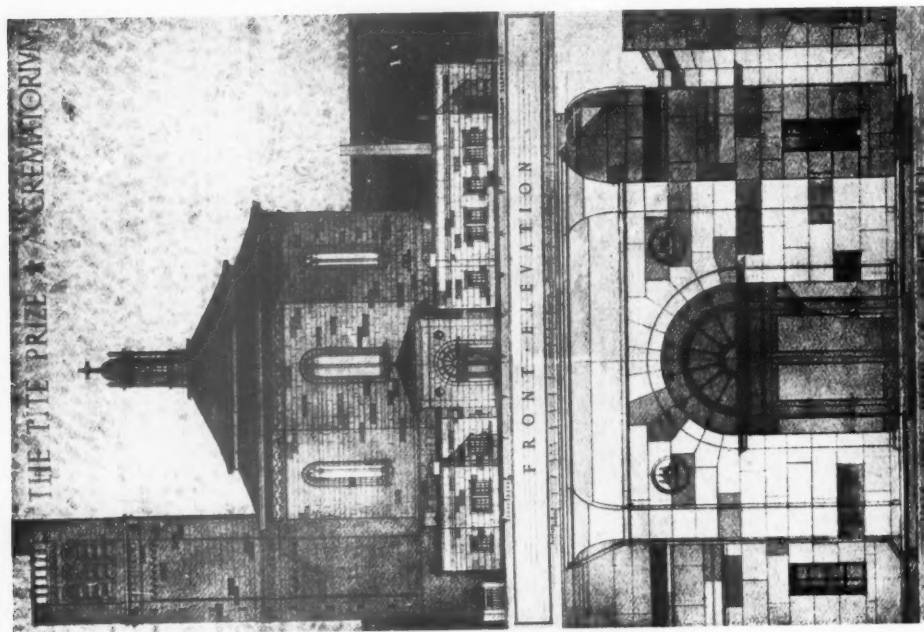
(See Mr. L. S. Sullivan's criticism in last issue of the Journal, pp. 133-140)



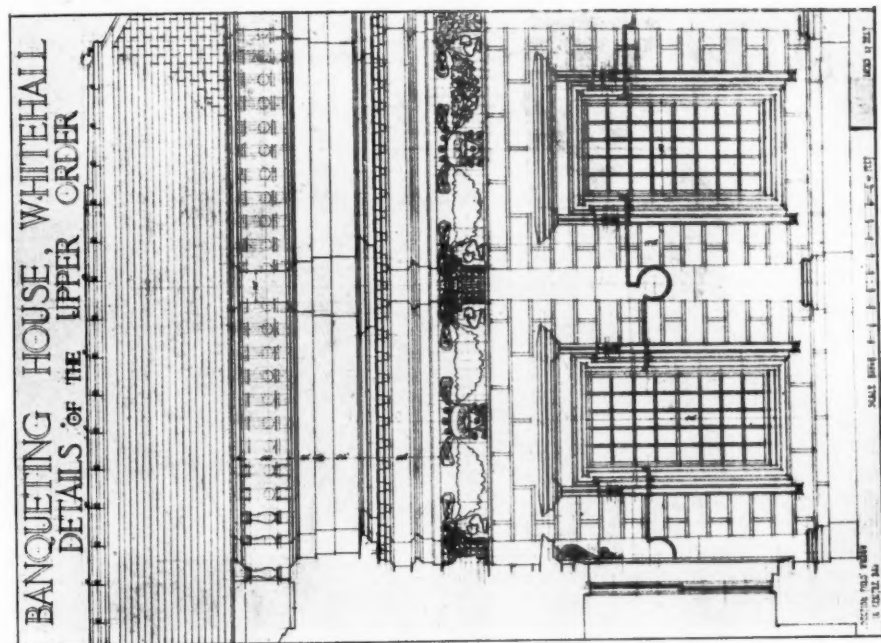
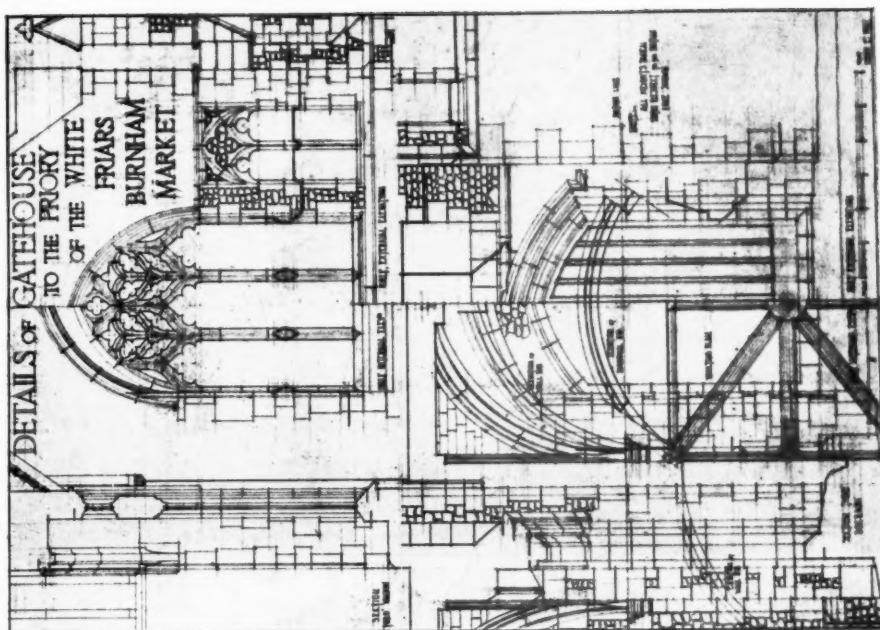
SHOP PREMISES FOR A DEPARTMENTAL STORES

By Alfred G. Geeson [A.]

(Awarded the Grissell Gold Medal)

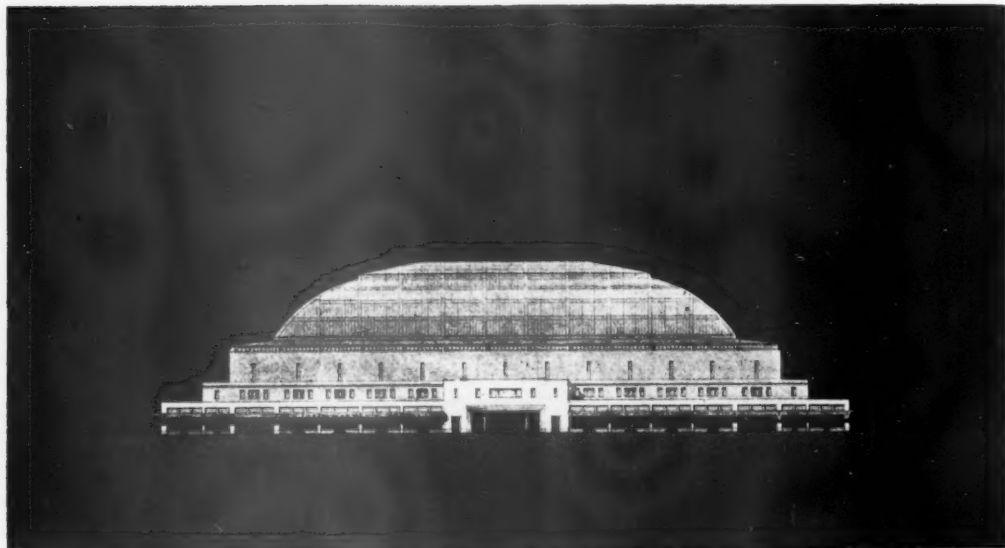


**A CREMATORIUM.** By Patrick McNeil [*A.*]  
(Awarded the Tite Prize)

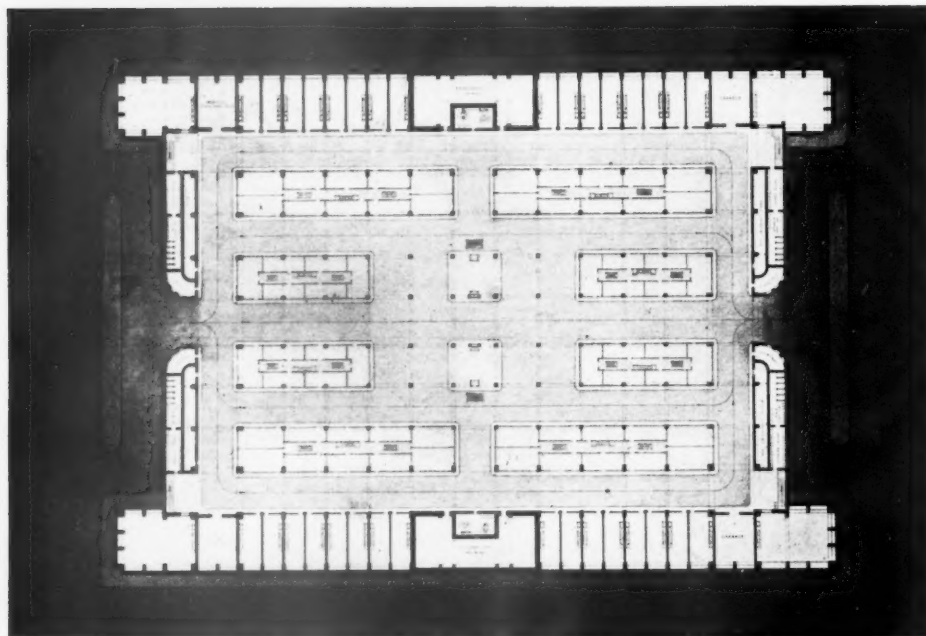


MEASURED DRAWINGS. By F. W. C. Adkins  
(Awarded the Institute Silver Medal for Measured Drawings)





Elevation



Plan

A COVERED MARKET. By Leonard W. T. White [4.]  
(Awarded the Soane Medallion)

THE R. I. B. A. BOSSOM TRAVELLING STUDENTSHIP.  
A SEASIDE HOTEL.



Elevation



Typical Bedroom Plan

A SEASIDE HOTEL. By Patrick Cutbush [A.]  
(Awarded the R.I.B.A. [Alfred Bossom] Travelling Studentship)

# Chinese Architecture\*

BY ARNOLD SILCOCK [F.].



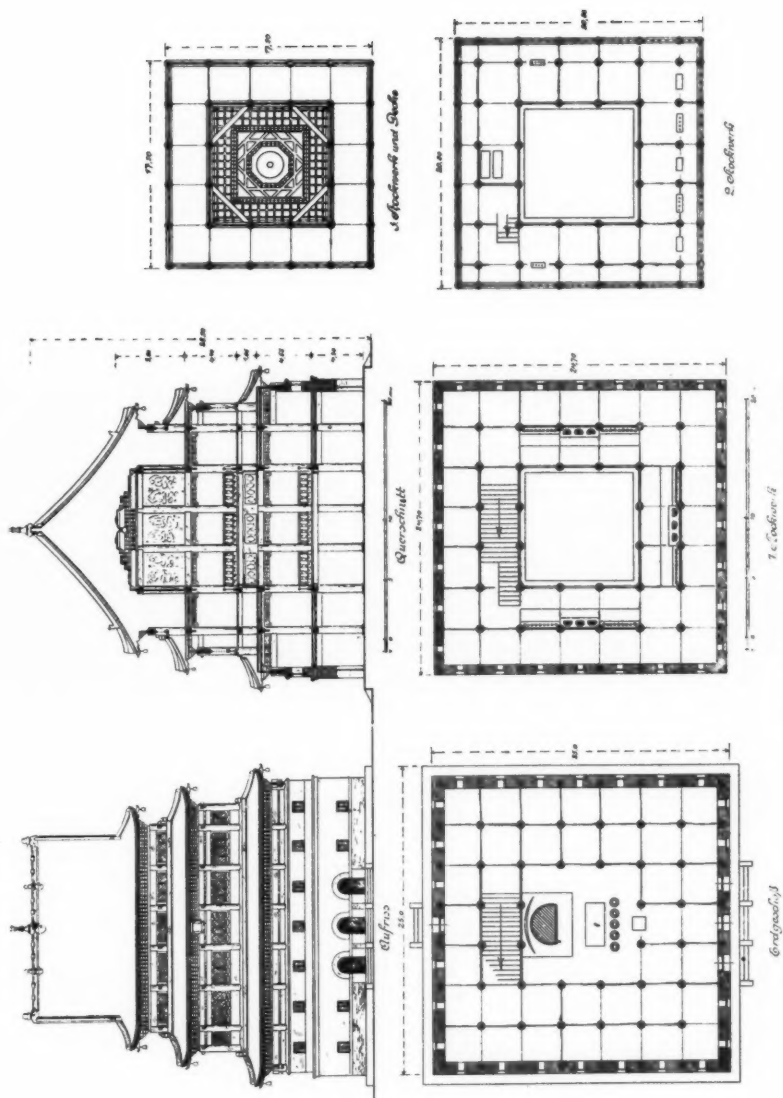
BELL TOWER, PEKING

It is extraordinary that the literature on all branches of Japanese art is much more comprehensive than that on Chinese, especially when one considers that the whole culture of Japan is merely an outgrowth of the earlier Chinese civilisation. In most of the arts the Japanese have been thorough plagiarists, and it is therefore all the more remarkable that the tributary has received so much attention while the parent stream has remained comparatively unexplored. This is especially true of architecture, for the construction and decoration of Japanese structures owe everything to Chinese inspiration and influence.

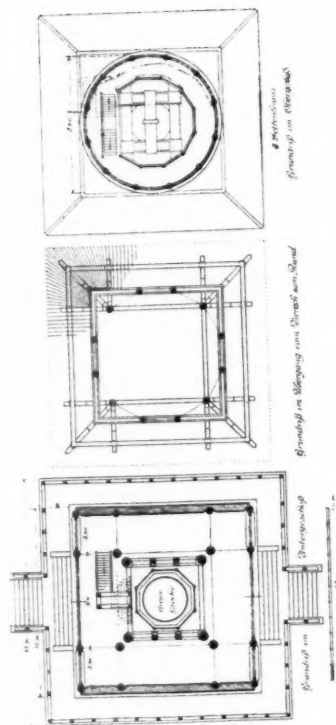
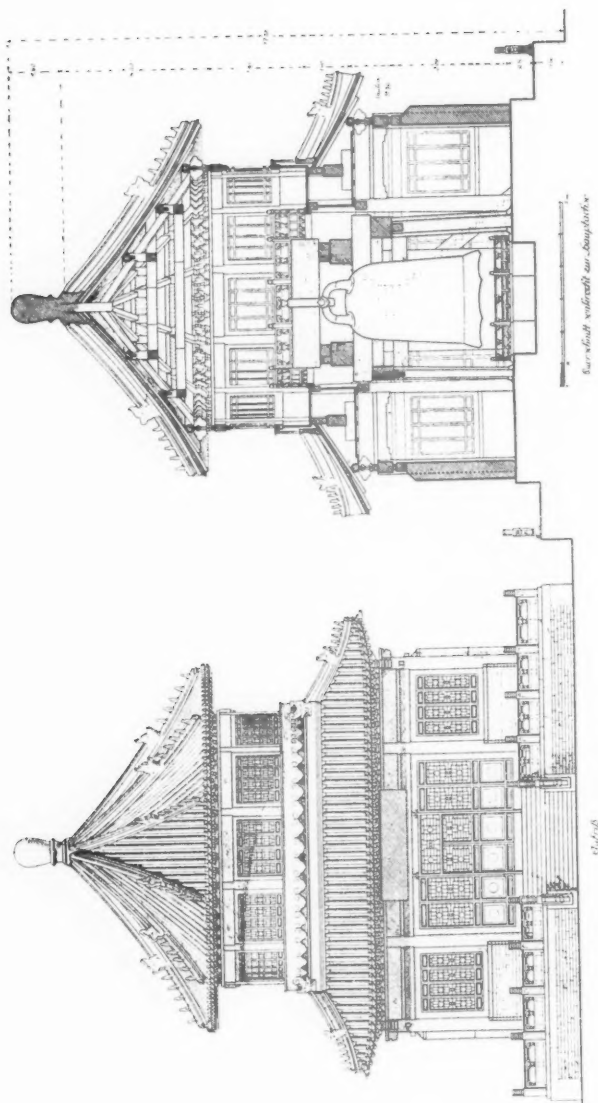
Ancient writings on the native style have been produced both in China and Japan, the earliest being a portion of that celebrated and monumental work, the *Chou Li* (The Ritual Book of the Chou Dynasty), a part of which concerns the art of building from 2200 B.C.; another being *Ying tsao fa shih* (Method of

Architecture), published A.D. 1103, which was described by Mr. Perceval Yetts in a recent number of the Bulletin of the School of Oriental Studies. These books, except the latter, are, however, interesting chiefly as relics of an ancient civilisation, and are too philosophic in their treatment and too primitive in their presentation and in the illustrations given to be of much scientific value. It is only natural and fitting that the Japanese, who owe so much to China, should be the pioneers in discovering her architectural treasures to the world. In 1906 the Japanese Government was able to produce in a modern form a magnificent set of volumes descriptive of the finest of the monuments of Peking. One of these works is known as *Photographs of Palace Buildings of Peking*, and it was published under the auspices of the Imperial Museum at Tokyo by Ogawa. It consisted of two portfolios of photographs and one of letterpress, with descriptive notes in English, Chinese and Japanese, in a limited edition of five hundred copies, one of which recently came on the market in China, and is at present on sale in

\* *Chinesische Architektur*. Two volumes. 162 pp. 346 pl. (6 colour). 39 illustrations and plans. Dr. Ernst Boerschmann. Berlin 1925. (E. Wasmuth.) £8.



PRINCIPAL HALL IN LAMA TEMPLE IN JEHOI  
(Jehol is the name of the site of the old summer palace)

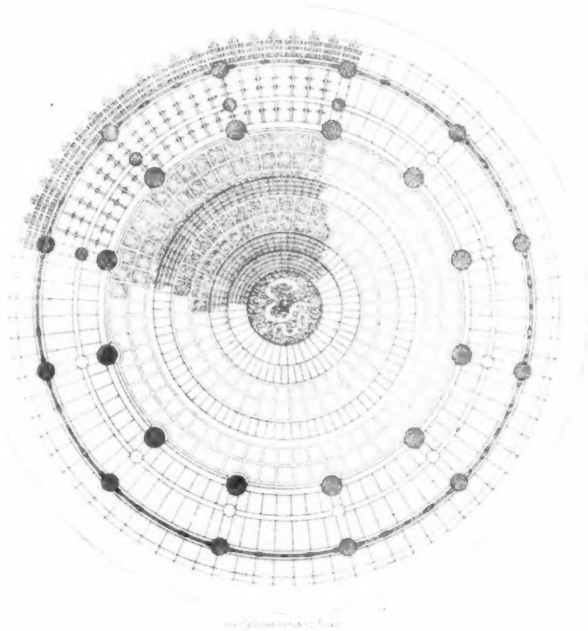
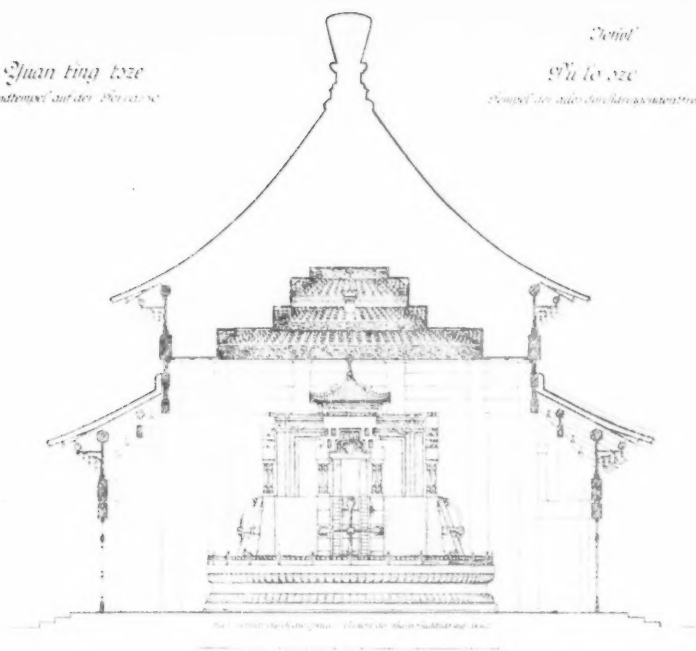


4. "TEMPLE OF THE GREAT BELL," North-West of Peking  
Round building over a square building



*Quan ting toze*  
*Rundtempel auf der P'ei-tze*

*Templ*  
*P'u lo sze*  
*Tempel des südlichen Himmels*



P'U LO SZE TEMPLE, JEHOL  
 Section through the Hall  
 Plan of Ceiling  
 A ROUND HALL WITH DOUBLE ROOF

England. This was for years the only modern and reliable book on the subject, but since that time other good works by the Japanese have been published, the most



A CIRCULAR BUILDING AT JEHOL  
(This is a photo of the P'u lo sze Temple shown in the working drawing)

recent being *Shina Peking-jō Kenchiku*, by Professor Ito, of Tokyo, the letterpress of which is unfortunately in Japanese character only.

Dr. Boerschmann's book is wider in scope, since

it embraces the whole of China in its survey and for the first time gives photographs and drawings, with descriptive notes, of the chief buildings not only of Peking but of most of the outlying provinces. For the first time, also, in a work of this type a large number of measured drawings made by the author are included, and these two novel features give the work its chief claim on our attention, for, unfortunately, the letterpress is disappointing. For example: In Vol. I the introduction is entitled "The Field of Chinese Architectural Forms." This deals not with the territorial distribution, but with the cultural and æsthetic provinces of the art. It is very brief and states that the book will only describe ancient buildings which exist to-day. Thereafter there is scarcely any allusion to the historical development of the style or to construction. Again, in writing on the origin of Pagodas, in Vol. II (the letterpress of which is only 50 pages, all told), Dr. Boerschmann repeats the usual statement that these charming and typical features of the Chinese landscape were merely an importation from India; the Chinese word is "t'a" or "pao t'a," and Dr. Boerschmann again states that the word has an Indian root. Yet so far as we know no one has succeeded in proving this statement, and Dr. Boerschmann presents no evidence, old or new. In a large book of this kind, and with the comprehensive title *Chinesische Architektur*, one would expect to find considerable space devoted to the unusually fine bridges of China; yet no section is devoted to bridges in either volume, nor are there any photographs or drawings worthy of mention. The curved Chinese roof has always excited surprise and admiration, and it is now generally agreed that a practical necessity caused the development of this feature. This was the need for wide eaves as a protection against sun and torrential rain, combined with the free admission of light and air, which upturned eaves provided. Yet Dr. Boerschmann does not mention this theory, but attributes these curves to a desire to express life and movement.

Dr. Boerschmann had the unprecedented good fortune to live in Peking and to travel through China when the people were genuinely friendly to foreigners. This was at the time when China made ready for revolution and prepared to throw off the yoke of centuries of despotism and prejudice and welcome every foreign innovation, even to the founding of a modern republic.

Those who do not want the measured drawings and the letterpress of *Chinesische Architektur* can obtain a cheaper book by the same author which consists of photographs only, in which the titles are given in Chinese, German, French, and English. This is entitled *Picturesque China*, published by Fisher Unwin, Ltd.

## The Origin of the Pendentive

BY PROFESSOR RAMSAY TRAQUAIR, M.A. (HON.) MCGILL UNIVERSITY [F.]

THE dome appears to have been used in the Near East from very early times. It is a form which builders in small material, in brick or in mud, would naturally discover and develop. We read that, in parts of Africa, negro huts are built of mud to a very accurate dome curve, as the result of experience; the dome is as simple in its origin as the arch, the lintel or any other primary building form.

But the circle is a form which it is difficult to fit into any series of rectangles, and before the dome could become an important architectural form it was necessary that some method should be devised of placing it upon a rectangular base. The dome was a fine form for a single, independent hall, but in early times it could not be used in combination with other rooms, without great waste and clumsy planning.

The Mesopotamian and Aegean peoples certainly knew of the dome. A bas-relief found by Layard at Kouyunjik shows domed buildings; and the Mycenaean "beehive" tombs are genuine domes, even if their jointing is not very scientific and they themselves are underground. But the plans of the larger Mesopotamian and Aegean buildings show no circular or square halls which might have been covered by domes. Their use was probably confined to isolated structures.

Various methods have been tried of placing a dome upon a square or polygon. The angles were spanned by lintels, squinch arches and corbels. Niches were introduced in the effort to make polygons approximate to squares. Some of these devices were very beautiful and well suited to special cases; all had a common fault, they were lacking in elasticity and were not suited to general use or to a large scale.

The well-known building at Kusr en Nûejîs in Eastern Palestine has a central square area covered by a dome on pendentives. The building is attributed to the second century B.C. and was built under Roman influences. It is, as far as I know, the earliest example of a dome with pendentives. But these are continuous pendentives, that is, the dome and its pendentives form a single hemisphere whose diameter is the diagonal of the square base. This hemisphere is intersected by four arches, so forming a segmental dome with continuous pendentives.

We may term "dome" that part of the structure which is above the crown of the arches and "pendentive" that part which fills the spandrels between them, but the whole form is really one, it is an "intersecting dome vault."

It may be suggested that such a form would rise

naturally amongst a people who were accustomed to the dome as a means of covering a space and who were asked to construct a cross or intersecting vault by their Roman employer. They were not accustomed to intersecting barrel vaults so they intersected a dome, and incidentally produced pendentives.

But this was only a half solution. After all, the saucer dome with its continuous pendentives is a vault form. It gives no suggestion of the great central dome which was to be the glory of later architecture, and, excepting on a very large scale, it could not be pierced by windows. Before further progress could be made the pendentive had to be thought of as independent of the dome; this was a difficult and rather daring step.

The first dome with independent pendentives of which we have knowledge is the central dome of Sta. Sophia at Constantinople. This has led to discussion. It has been held that so important a form could not have originated on this very large scale and that Anthemios must have brought it from Asia Minor, where it was presumably already in use.

Yet there are grounds for believing that the independent pendentive originated in Sta. Sophia and that it was the very size of the dome which led to its discovery.

The account of the church by Procopius describes quite clearly the pendentives and the dome resting upon them, pierced in the lower part by windows.

On 7 May 558 A.D., the eastern part of the dome, "built by Isaurian workmen, with the apse, was thrown down by an earthquake, destroying in its fall the Holy Table, the ciborium and the Ambo."

Paul the Silentiary writes: "The very foundations of the dome failed and thick clouds of dust darkened the midday sun. Yet the whole church did not fall, but only the top of the eastern vault and a portion of the dome above. Part lay upon the ground, part open to the light of day, hung suspended in the air."

Procopius makes no mention of this earthquake, though he describes in full how, during the building of the church which was completed in 537, the piers of the eastern arch threatened to give way before it was finished.†

\* General acknowledgment should be made for historical and other data to Lethaby and Swainson's *The Church of Sancta Sophia*. Salzenberg's drawings have been used and the theory was originally founded on an inspection of the building.

† Theophanes. *Chronographia* quoted by Lethaby and Swainson.

There is much difference of opinion as to the exact date at which Procopius wrote. According to Krumbacher, his account was finished and published in the year 558 or, at latest, in the spring of 559. Ramsay, however, holds that it could not have been completed until 560 A.D., whilst Lethaby and Swainson hold that it was written and recited as an opening ode at the Encaenia of December 24, 563.\*

If this were the case, and if, as they suggest, parts of the poem were actually recited in the church itself, it is difficult to imagine that the description would be that of the old and vanished dome, and not that of the

building which was on the curve. And they made the arches wider, so as to be more in harmony with the others, thus making the equilateral symmetry more perfect. In this way they were able to cover the measurelessness of the empty space and to steal some of its extent to form an oblong design.

And again they wrought that which rises up over it in the middle, whether orb or hemisphere or whatever other name it may be called, and this became more straightforward and of a better curve, in every part agreeing with the line; and at the same time not so wide, but higher, so that it did not frighten the spectators as formerly, but was set much stronger and safer.\*\*

From these descriptions we may gather that in 558 the earthquake brought down the eastern arch, the upper part of the eastern semidome and parts of the central dome. The eastern piers did not fall, for, if they had, the side arches and the whole of the central dome would have fallen also. Apparently they did not. In the rebuilding, alterations were made to the walls under the northern and southern arches with a view to strengthening them, but the piers and the western end are in the main those of the original building.

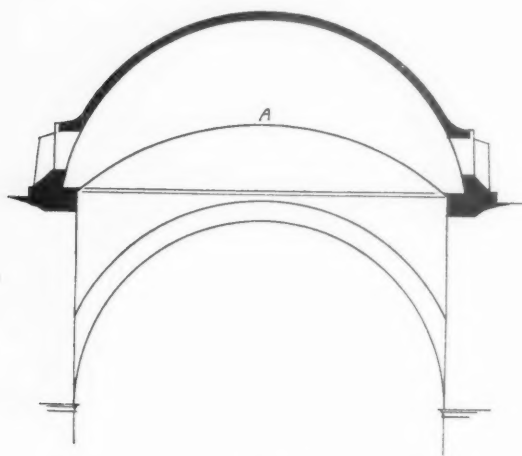
In rebuilding the dome it was increased in height to the order of 20 or 25 feet, making it more secure both in fact and particularly in appearance.

Now it may be suggested that the original dome was a dome with continuous pendentives. This type is used in the east and west semidomes and was well known to the architects of the day. It was the natural form to use, though it had never before been used on so large a span.

If this is the case it should be possible to compare the present measurements with those to which the original dome must have been built. I have taken the measurements from the best sources available, but it must be remembered that the sizes of Byzantine buildings are very irregular. A discrepancy of a few feet in large measurements has not the significance which it would have in western architecture.

The diameter of the present dome is 104 feet from rib to rib, with a gangway all round of 2 feet 9 inches. The square formed by the four piers is very closely 100 feet. The diagonal of this square is 142 feet. The pendentives spring from the extrados of the arches, so that double the depth of the arches must be added to the diagonal to give the diameter of a dome with continuous pendentives. The depth, taken from the Salzenberg drawings, is between 4 and 5 feet. This gives a diameter of 151 feet and a radius of 75 feet 6 inches.

The crown of a dome with continuous pendentives would therefore have been 75 feet 6 inches above the springing of the arches.



SECTION THROUGH THE MAIN DOME OF STA. SOPHIA, CONSTANTINOPLE

A.—Shows suggested line of the first dome

new and infinitely more beautiful dome. The description fits the present dome and it is probable that it refers to it; for the form was altered when the dome was rebuilt.

According to Theophanes, "The Emperor restored the piers and raised the dome 20 feet. Zonaras gives the increase at 25 feet.† Agathias writes: "And as by the earthquake the middle portion of the roof and the higher parts had been destroyed, the king made it stronger and raised it to a greater height. Anthemios was then dead, but the young man Isodoros and the craftsmen, turning over in their minds the previous design and comparing what had fallen with what remained, estimated where the error lay and of what kind it was. They determined to leave the eastern and western arches as they were. But of the northern and southern they brought inside that portion of the

\* L. & S., p. 35.

† L. & S., p. 22.

\* L. & S., p. 34.

The existing dome is 46 feet 9 inches in height above the cornice. The thickness of the dome arch and cornice is somewhere between 6 and 7 feet, say, 6 feet 6 inches, the height of the dome arches is 50 feet. Adding these together we have 103 feet 3 inches as the height of the present dome above the springing of the arches. This is 20 or 25 feet higher than the first dome.

Deducting 20 feet we get 83 feet 3 inches, deducting 25 feet, 78 feet 3 inches as the height of the original dome. This is a discrepancy of from 2 feet 9 inches to 7 feet 9 inches from the previously calculated height. Considering the margin of error of Byzantine building it does not seem excessive.

When a Byzantine brick dome collapses, the portions filling the spandrels usually remain, supported by the dome arches. This I have observed in many ruined Byzantine buildings. After the earthquake then, Isodoros and his craftsmen found the two western pendentives left, for only the eastern arch had fallen. They strengthened the side arches, restored the east arch, and the dome as far as the crown of the arches and added the present cornice, thus constructing the first independent pendentives. They then raised the height of the remainder of the dome almost to a hemisphere, setting it well back on its circular base and leaving the present gangway.

If this is correct the first independent pendentive

was built at Sta. Sophia as the result of an accident intelligently utilised, and for the purpose of giving increased stability to the great dome. The admiration with which the dome was greeted indicates, I think, that some very unusual feature appeared in it and this was possibly the break in structure and in curve between the dome and its pendentives. The very size of the dome led to its collapse, and it was the very size which led the architect, "turning over in his mind the previous design and comparing it with what remained" to devise a new, more stable and more beautiful form for his dome.

I have suggested that the pendentive itself may have arisen in a semi-accidental way. The Roman employer wanted an intersecting barrel vault, the eastern workmen were more accustomed to domes, and the collision of the two methods produced the pendentive. In both cases, a feature of beauty in architecture was the result of practical or structural needs.

Since writing this, I have read in Professor Lethaby's little book *Architecture* a suggestion that he holds a similar view of the Sta. Sophia pendentives. I venture, nevertheless, to publish conclusions which were formed independently and, indeed, before the publication of Professor Lethaby's admirable little book.\*

\* *Architecture*. W. R. Lethaby. Home University Series, p. 153.

## German Baroque\*

MR. SACHEVERELL SITWELL'S NEW BOOK.

BY MARTIN S. BRIGGS [F.]

THE Sitwell family has taken up Baroque with a vengeance, and though the author of this book informs us in his preface that it "is in no sense meant as a companion volume to a previous publication of mine—*Southern Baroque Art*," he informs us that he intends to publish two more books on the period, one covering "the old Kingdom of Naples" (i.e., Southern Italy and Sicily) and the other dealing with Spain, Portugal, and their colonies in America; so that we are in for a very considerable dose of literature about a style which was hardly mentionable fifteen years ago and is now in the forefront of dilettante fashion. I say "dilettante fashion" intentionally, for it does not appear that modern architectural design has availed itself of Baroque motives to any appreciable extent, the tendency of the moment being rather in the direction of increased severity of line and mass.

And as one who may claim to be jointly responsible for the change of opinion in regard to Baroque architecture, I take this opportunity of restating what seem to me to be its inherent characteristics before I proceed to the consideration of Mr. Sitwell's new book. The word "Baroque" has always been a nickname, signifying a malformity or abortion, just as "Gothic" was originally a

term that implied barbaric rudeness. But whereas Gothic architecture has now completely lived down its name, the prejudice against Baroque design still lingers. And to me there is nothing surprising about that. For however the pendulum of fashion may swing, the nature of Gothic is so firmly rooted in honest and sincere construction that its masterpieces must always appeal to a rational mind, whereas even the admirers and defenders of Baroque—Mr. Sitwell among them—recognise that it was the outward and visible expression of a pompous and artificial life. The only sane view of Baroque architecture is that it has merits as well as defects, and that many of its features are altogether unsuitable for revival in modern building. Its merits consist mainly in the direction of monumental planning and grouping. The interior planning of Baroque churches is rational as well as magnificent, the design of staircases (as Mr. Sitwell rightly reminds us) reached a level of excellence in that period that has never been surpassed, and the external grouping of such buildings as S. Maria della Salute at Venice or the Abbey at Melk, in Austria, is superb, while the lay-out of Baroque villas in Italy and of Baroque towns in various countries is full of inspiration to every student of architecture. The attitude of writers of twenty years ago was unfair to Baroque because they conveniently excluded from its scope anything that they could not help admiring—such as Bernini's colonnade in front of St. Peter's—and con-

\* *German Baroque Art*. By Sacheverell Sitwell. (London: Duckworth, 1927.) 25s. nett. Pp. 109+48 plates.



centrated their venomous attacks on its excesses and defects in other directions. In those days students were never told that there was anything to learn from Baroque planning or grouping, while their noses were kept closely to Paley's not-always-beautiful mouldings of the thirteenth century. For a building that has to be formal or magnificent or striking or picturesque, there is inspiration to be found, even in these penurious days, in Baroque architecture.

Nextly, it may be observed that it accurately reflected the spirit of its age, a pompous, stilted period of periwigs and powder, an era that often seems simply absurd and artificial to us of post-war days. But you cannot have it both ways: if architecture to be excellent must honestly reflect the spirit of its age, then Baroque architecture is superlatively excellent. So say the apostles of one school of thought, but, to those of us whose sympathies are rational and democratic, this aspect of Baroque makes no appeal whatever, except as an interesting phase of artistic development. In the Hapsburg Empire, Mr. Sitwell tells us, there were some three hundred German courts each with its circle of obsequious flunkies and clerics. Their vulgar, ostentatious tombs, "sculptured absurdities," clutter up the aisles of churches in every little German capital, and most of them were mere nonentities. Prince Eugène was perhaps the greatest of all these people, but the marble group of his "apotheosis," illustrated in this book, seems simply ridiculous; and the ivory statuette shown on another plate—representing Leopold I in a wreath, a wind-blown cloak, and full armour, on a charger trampling on a Turk who props up its belly with one outstretched leg—all this is mere clever foolery. Nor are most of us able to raise any enthusiasm for the swarms of pink cherubs who crowd the ceilings of the Baroque painters: the reserve imposed on our taste by a training in classical restraint as well as by our northern temperament makes us shrink from all this stupid bombast.

The reasonable and critical attitude to Baroque is to recognise that in matters of planning and grouping it has much to teach us, but that in the misuse and superabundance of ornament its masters overshot the limits of architectural decency, just because they were the mouthpieces and servants of an unhealthily artificial aristocracy. Even Mr. Sitwell describes Vienna, the German Baroque capital, as a "metropolis of anti-democracy," and he points out that the builders of Baroque buildings were either noblemen or parasitic clerics. He also contrasts the hard military efficiency of Frederick the Great with the effeminate Rococo extravagances of his buildings at Potsdam. "Wedding-cake architecture," we call such designs, but surely the boot is on the other leg and modern confectioners have borrowed these excruciating ideas from the architects who designed Sans-Souci at Potsdam and the Zwinger at Dresden.

This brings us to the distinction between "Baroque" and "Rococo," a distinction clear to any student of the period and fairly well stated by Mr. Sitwell. It may perhaps be said that Baroque is an essentially Italian product and rather masculine in its violent revolt against Palladian pedantry, whereas Rococo—as we see it at Potsdam, Dresden, Nymphenburg or Bruchsal—is a French variant that has passed through the boudoir and the powder-closet. Mr. Sitwell does not put it as coarsely as that, but he seems to imply it. Rococo buildings are included in his survey, and he rightly insists that from c. 1685 to c. 1780—the limits he assigns to his period—

Germany produced a series of Baroque and Rococo buildings unrivalled elsewhere in Europe.

The book, as one might expect, contains much vivid writing and penetrating criticism. Mr. Sitwell makes the absurd courts of the petty German princelings live again for us. But he cannot resist an occasional outburst of naughtiness, as when he says of Prussia, on p. 62, that "there is not much to it," or where he speaks, on p. 67, of "a nice hall," and on p. 41 of "gates of entrance." These lapses are presumably intentional annoyances for the reviewer (like the first page of *Revolt in the Desert*), and the extraordinary paragraph about Fischer von Erlach, near the top of p. 40, must be another such case.

Quoting Mr. Sitwell's own phrase, we may say of his book that "there is not much to it": only some 94 pages plus a bibliography and illustrations. There is no index, though he mentions innumerable buildings and persons. The text is divided into three parts: an excellent introduction, "The Historical Scene"; a hurried "catalogue" (his own description) of German Baroque buildings, entitled "An Architectural Tour"; and a useful concluding chapter, "An Epitome of Painters and Craftsmen." (It is one of the mitigating features of Baroque art that painting and sculpture were really the handmaidens of architecture at that time). "Germany" for his purpose is the Germany of the seventeenth and eighteenth century, not the modern empire of that name, so it includes modern Austria and portions of Poland and other new states. He even devotes three precious pages in the last chapter to England, Belgium, Holland, Scandinavia and Russia: none of which specially deserve mention in a study of German art. So far as the German states are concerned, the list of examples seems fairly complete, and such criticism as Mr. Sitwell gives us is sound, though one would have thought that a publisher would have allowed a more spacious treatment in view of the amount of research evidently devoted to the subject by the author. An incidental reference shows that Mr. Sitwell classes Wren as a Baroque architect, which is going too far, though Wren undoubtedly imbibed some Baroque ideas. Another interesting point is the amount of work done in Germany by "at least a dozen members" of the Bibbiena family, architects and draughtsmen, whose great achievements in theatre-design were the natural product of a thoroughly theatrical age. The influence of Pozzo, Tiepolo, Oppenord, and Meissonier, and the work of the two former artists in Germany is admirably described. The similarity of the Karlskirche obelisks to Persian minarets is ingeniously suggested, and the author's statement that Baroque found its way through Kieft to the mosques of Northern Persia opens up a new route of development, providing an exception to the idea that everything in art moves from East to West.

Mr. Sitwell's bibliography is curiously incomplete in spite of its length. His list of old books appears adequate, but he omits among modern works such standard authorities as the works of Gurlitt, Pinder, and Brinckmann on German Baroque art in general, and a number of important monographs in German. Mr. Lancaster's recent little book on Fischer von Erlach should surely have been mentioned, and the three chapters devoted to German and Austrian Baroque in my own book, *Baroque Architecture* (1913), which also appeared in German in 1914, might have been noticed as the first English description of the period.

The 48 plates in Mr. Sitwell's book form an interesting and unusual series, but the selection is altogether lopsided, as there is no illustration of the Karlskirche at Vienna; nothing from Prague, Salzburg, Graz, Innsbruck, or Linz; while the provinces of Hungary, Bohemia, Bavaria, Saxony and Poland—all abounding in Baroque examples—are not represented at all. In fact, many of the illustrations serve to play the author's wayward fancy rather than to elucidate the main thread of the letterpress.

## Correspondence

### ARCHITECTS AND ADVERTISING.

January, 1928.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—Many members have from time to time received copies of newspapers illustrating on one page some important building and containing on the same page advertisements inserted by contractors and sub-contractors who have been employed upon the erection and completion of the building.

Cases are stated to have occurred where the architect concerned has approached the contractors and asked for their support by way of advertisement, but a more common form seems to be that the newspaper canvasser makes full use of the architect's name in approaching the firms concerned, thus placing them in a very difficult position. The matter has been considered by the Practice Standing Committee by request, and the Committee are of opinion that this form of advertisement is undesirable and one to which members of the Institute should not give sanction or countenance.—Yours faithfully,

W. E. WATSON [F.].

Hon. Secretary, Practice Standing Committee.

### INFORMAL DISCUSSIONS AT BUSINESS MEETINGS.

2, Coates Crescent, Edinburgh,  
11 January, 1928.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—The proposal of the Practice Standing Committee as outlined by Mr. Elkington at the last business meeting of the Institute is an excellent one, and such informal discussions should prove of great value to members of the profession who are able to attend them. It is, however, difficult for provincial members (especially north of the Tweed) to find time to attend such meetings.

If the proposal, that no record of such meetings be published, is adhered to, the value of such meetings will be lost to the greater bulk of the profession.

There are still a number of unsolved problems relating to professional practice which might be discussed with profit at these proposed meetings, and it would be of immense value to the profession generally if some form of condensed (expurgated if necessary) record of the general conclusions of such meetings could be obtained by all the members of the Institute.

The present lack of unity in the profession is largely due to the indefinite ruling and action on the part of the Council relating to certain questions affecting the welfare and good name of the profession.

WILLIAM DAVIDSON [F.].

Bank Chambers, 32, Strand, W.C.2.  
23 January 1928.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—Members of the Institute will surely welcome the suggestions of the Practice Committee so ably presented and explained by Mr. Elkington at the last Business Meeting.

Problems which cannot be anticipated in the curriculum of any architectural school constantly arise in the rough and tumble of general practice, and the knowledge necessary for their solution can only be acquired by experience. The Committee's proposal, if acted upon, provides for just that friendly and informal setting in which these everyday difficulties can be brought forward and discussed, and such interchange of opinions by fellow members can scarcely fail to be of practical value to all. It is to be hoped that full advantage will be taken of the opportunity now offered.—Yours faithfully,

SYDNEY TATCHELL [F.].

### RE PARTY WALL AND OTHER AWARDS.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—May I be allowed to supplement Mr. W. E. Watson's note under this head in the JOURNAL of 17 September last?

Section 38 and Schedule I, Part V, of the Law of Property Act 1925 deals with party structures.

In the case of Party Wall Awards given under the Building Act of 1894 an application by letter to the Chief Land Registrar, H.M. Land Registry, Lincoln's Inn Fields, London, W.C.2, by the proprietor of the land to note the same on the register of registered land may be made if desired.

Such an application should be accompanied by the Land Certificate, the original award and a certified copy thereof, and a fee of 5s. There is no special form of application.

The value of registration and the corresponding record on the Land Certificate of any award affecting the property is manifest.—Yours faithfully,

SYDNEY TATCHELL [F.].

### THE ARTISTS' GENERAL BENEVOLENT INSTITUTION.

6, Gray's Inn Place,  
Gray's Inn, London, W.C.1.  
19 January, 1928.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—Will you allow me to use your columns as a means of appealing to our members who have kindly promised donations to the funds of the Artists' General Benevolent Institution?

I should like to point out to those who have kindly promised me their support that there is a two-fold advantage in sending their donations as early as possible, (1) because all sums received are credited to a special deposit account at the bank and earn interest which helps to increase the total sum which will be paid over to the funds of the Institution next May, and (2) because by sending donations now my friends will render it unnecessary for me to worry them with a second application, thus saving clerical expenses and postage.—Yours faithfully,

H. P. CART DE LAFONTAINE [A.],  
Steward, A.G.B.I.

## Thomas Hardy, 1860-1927

The death of Thomas Hardy has come a little unexpectedly; the newspapers had certainly indicated that he was ill, but the news on the whole with regard to his health was favourable—that “he had spent a better night” and so on. And so the announcement of the ultimate catastrophe came a little suddenly—although the attainment of eighty-seven years of age suggests that life at any time may be ended without complaint of prematurity.

Thomas Hardy's career has an interest alike for architects and for students of literature. For some years he was in architects' offices; in 1862 he gained the R.I.B.A. Essay Medal for an essay on “The Application of Coloured Bricks and Terra Cotta to Modern Architecture,” but the £10 that usually accompanied the prize was withheld because “the author of this Essay has scarcely gone sufficiently into the subject proposed, and that portion referring to moulded and shaped bricks has scarcely been noticed.” Hardy was only twenty-two at that time, and no doubt the judgment was fair enough: but one would have liked to be able to-day to read that essay. It has disappeared. The librarian of the Institute reports that he has repeatedly searched for it, but always in vain. It had certainly, if it ever remained in the hands of the Institute, disappeared before the present librarian's time. Hardy in his twenty-second year was a quiet, unassuming young man, characteristics which were predominant in his nature until his death. For fifteen years architecture was his vocation and means of livelihood; but he had meanwhile turned his thoughts to literature, and his first story, which was published in *Chambers's Journal* in 1865, was “How I built myself a House.”

Nothing remains, we believe, to indicate how far Hardy might have advanced in architecture if he had not taken to literature: but we think there is a good deal in his writings to show that his study and practice of architecture influenced his expression in literature. After all, it would not be difficult to find in both arts the same guidance to general principles for excellence in either art (“There is only one art”): balance, proportion, the elimination of inessentials, seemliness (to use a phrase of Mr. Dawber's), the right word in the right place. “The chief thing in art,” wrote Cicero, “is that what you do shall be befitting.”

Two articles appeared in last week's journals, one in *Country Life*, by Mr. Ralph Jefferson, and the other in *The Architect*, by Mr. Lawrence Dale, which especially deal with the architectural references in Hardy's novels. Some of these passages are very fine prose: and in their construction and expression it is not difficult to discover the attitude of mind towards literary expression which would be equally appropriate towards architectural expression. It is not difficult to apprehend that that would be almost inevitable in the case of any artist who after years of study in one art changes his medium of expression to another. It accounts for a considerable measure for what one calls “style” in Hardy's writing. He stands out amongst the great novelists of the Victorian epoch for a more severe method in his style as in his approach to life. Amongst these writers probably

George Eliot is most akin to him. Thackeray, with his polite and sometimes bitter cynicism, and Charles Dickens, with his most lovable humanity and cheery sense of caricature, are very remote indeed. Although it is recorded, we believe, that Hardy wrote a novel, at the absurd advice of a publisher, which thrilled with incident, he was much too great a man ever to be possessed with the idea that great fiction was a matter of invention rather than a matter of realization, the depicting of the unlikely rather than of truth, which stares every artist, whether he be a painter, architect, or novelist, in the face as he looks upon nature or on mankind. The readjustment of this material into the form of art is in a way architectonic. Hardy's style was severe, reminiscent, perhaps, more of French writers such as Balzac or Flaubert, than his English predecessors. Life to him was not a thing to be taken as the mere plaything of a clever spinner of words. It was very real, very earnest, and, largely, very sad, but not too sad. Romance runs through most of his novels. He chose for his macrocosm a piece of South countryside: there he found the emotions, the joy and pathos, even the tragedy of living. He was content with the bounds of this landscape: he lived in it, loved it, portrayed it in words which induce critics to compare it with the tragedies of the Greeks. In later years his reputation has increased; his quiet country house has been a place of pilgrimage for writers of all degrees; and if we wonder sometimes whether such visitors were always acceptable, we know that they were always received with urbanity by this quiet countryman who loved his art and had a generous apprehension of humanity, and was perhaps not wholly indifferent to appreciation (who is?) from indifferent sources.

His ashes were buried in Westminster Abbey: but his heart remains on his own beloved countryside. Arnold Bennett, after the ceremony at Westminster Abbey, wrote criticising the discretion of the invitations which had been issued for the ceremony. But would Hardy have cared? His whole manner of living and approach to life was a complete indifference to inessentials, although perhaps no living artist or writer has been more honoured by universities or received more tributes from the highest quarters.

As an admirer of his said the other day, “Hardy was a simple man; he was probably a great man; in every case he was a sincere man. He wrote as a vocation and for a livelihood. But he never wrote for money.”

R. D.

Thomas Hardy was born in Dorsetshire on 2 June 1840. He was educated in local schools and received private tuition in London. He was a pupil of John Hicks, ecclesiastical architect, 1856-61. Sketched and measured many old country churches, now pulled down or altered. He removed to London, and worked in the office of Sir Arthur Blomfield, A.R.A., from 1862 to 1867. He was engaged altogether for about fifteen years in architectural employment. In the course of a Paper which he read at the meeting of the Society for the Protection of Ancient Buildings, in 1906, he said on the subject of restoration: “All that I am able to do is to look back in a contrite spirit at my own brief experience as a church-restorer, and by recalling instances of the drastic treatment we then dealt out with light hearts to the unlucky fanes that fell into our hands, possibly help to prevent its repetition in the few left untouched.”

## Standard Building Contract\*

### AGREEMENT REACHED: CLOSER TENDERING AND FEWER DISPUTES

An agreement embodying a new standard building contract has been reached by a conference representing the Royal Institute of British Architects and the Surveyors' Institution on the one hand, and on the other the National Federation of Building Trade Employers and the Institute of Builders. The conference also had the assistance of technical representatives of certain of the Government Departments and of the Local Government Officers' Association, though they are not parties to the agreement.

The new form of contract is suitable not alone for building, but for all kinds of constructional work. It provides for a range of circumstances extending from the dismissal of an incompetent workman to the settlement of all claims and differences which may arise from such a serious occurrence as the recent collapse of a commercial building in Cornhill while constructional work was proceeding on an adjoining site. The annual value of the building work in this country is between £150,000,000 and £200,000,000, and tens of thousands of building contracts are entered into every year. Agreement upon a standard form of contract, adapted to the modern conditions of the industry and to all classes of work in all localities, is therefore a matter of importance. Such a form of contract has many advantages. It will make for economy, for more equal opportunities for tendering, for closer tendering for competitive work, and for the elimination of causes of dispute and the settlement of such disputes as may still arise.

A building contract is usually a complex document, consisting of plans, elaborate schedules of all the quantities of work of different kinds classified under the various building crafts—viz., bricklaying, carpentering, plumbing, slating, etc.—a comprehensive specification, articles of agreement, and the conditions which govern the contract. Even so, the plans may subsequently be varied by the submission of details as the work proceeds. Variations, either by way of additions or deductions, are frequent. The new form of contract governs all questions that may arise during the currency and after completion of the contract. It is intended clearly and equitably to provide for the relative position of all parties concerned in respect of all matters or questions of difference which may arise.

Sir William Mackenzie, K.C., the agreed referee, to whom the conference has submitted the contract for opinion, has reported upon it as follows:—

"In my judgment the standard form of building contract submitted to me for my consideration is a really notable achievement on the part of all concerned. No more complex questions, under all the varying circumstances that may arise, can emerge for consideration than under a building contract. The power of the building owner to vary or add to the contract works; the dislocation caused by circumstances outside the control of parties, e.g., by trade disputes or weather conditions; and the delicate and difficult questions which may arise

with adjoining owners are apt illustrations of the matters to which I refer.

"The standard form of contract is comprehensive, including not only building, but all manner of constructional works. The standardisation of the relative rights and liabilities under a building contract on a basis that is fair and just to the building owner on the one hand, and the contractor on the other, with a due regard to the interests of the building industry as a whole, and the applicability of such a contract to all classes of work present a problem of no mean order. I think that the standard form has solved the problem with signal success.

"It is plain to me that the most careful and detailed consideration has been brought to bear upon each and all of the clauses with a view to securing what is fair and reasonable to the parties concerned, without losing sight of the overriding necessity of not impeding the due and regular progress of the contract works. No building owner need fear that his interests are prejudiced. Indeed, I am convinced that the architect under the standard form is, in many ways, in a stronger position and can more properly and effectually subserve the interests of his client than formerly. So far as human foresight can attain it, all possible cases of doubt or difficulty appear to have been removed by this agreement; and I am specially pleased with the lucidity and simplicity of the language used.

"It is my considered opinion that it is difficult to measure the advantages that will flow from the general adoption of this standard form of contract. The elimination of uncertainties and ambiguities and the certainty introduced by a standardisation on fair and just lines in clear and simple language must necessarily create confidence throughout the building industry; and, I cannot doubt, will, by reason of equitable and known conditions, result in closer prices and in reducing building costs."

Satisfactory as the agreement is now found to be by the representatives of all the interests concerned, it was not reached without difficulty. The conferences began in 1922, with Mr. Laurence Tooth, barrister, as legal adviser. The main burden of the negotiations has fallen upon Major Harry Barnes and Mr. Searles-Wood, on behalf of the architects, and Sir Walker Smith and Mr. Stephen Easton, Lord Mayor of Newcastle, on behalf of the contractors. There were two or three occasions in the course of the prolonged discussions when it seemed that failure could not be avoided; but skilful negotiations, and the exercise of a scarcely less skilful patience, at last had a successful issue. At present there are many forms of contract in use, but that most generally adopted is the one upon which the Royal Institute of British Architects and the National Federation of Builders agreed in 1909. Since that time considerable changes have been made in building contracting practice. There have been great developments in respect of the variety and grades of material available. There is increased complexity in the art of construction, and it is a growing practice to include provisional sums for specialist sub-contractors. Quantity

\* From *The Times*, 18 January 1928.



surveying has also developed. The 1909 form of contract became out of date and the builders insisted on revisions, with the result that in 1920 the architects issued their own form of contract and the builders framed the National Building Code. The two were seriously divergent and the building code in particular revealed lack of consideration for the position of the other parties. Experience proved the need for endeavouring once more to draft an agreed form.

The position of the architect was the principal question raised by the builders. When architects prepared their own conditions of contract they, not unnaturally, made themselves sole arbitrator in the event of disputes with the contractor. Under the 1909 form of contract the architect's powers were altered. His arbitral functions were limited to certain specified matters. But the builders have desired, and have obtained in the new agreement, a right of appeal to an independent arbitrator. The architects who have helped in the shaping of the new agreement had no objection to the principle of arbitration, but they required assurances that they were not prejudicing the interests of their clients. They insisted that the direction of the work should rest solely with the architect, and that the change in the method of settling differences of opinion between parties should not delay the progress of the work. These conditions were acceptable to the contractors' representatives, who recognised that the architect's position and responsibility demanded prompt conformity with his decisions and requirements.

Two main changes brought about by the new form of contract are :—

(1) The element of "gamble" in contracting will be eliminated as far as possible by the adoption for the

industry as a whole of a form of contract that makes provision for all requirements and meets all contingencies.

(2) Undisputed control of the work will be vested in the architect—the recognised agent of the employer—whose directions must be complied with in every respect; no avoidable delay will be permitted; any decision the architect may formally give upon request will be binding on both parties, if not disputed, and if disputed will be the subject of appeal to an independent arbitrator.

It will obviously be an advantage to architects and builders alike to have a form of contract of general application irrespective of the size or description of the building operations or of the locality. It is expected also that the new document will increase confidence between the parties, and will tend besides towards a uniformity of requirements that will enable contractors to quote more closely, because of the knowledge that unusual and uncertain provisions will not operate against them in their execution of the work. On the other hand, the employer—the building owner—will have the assurance that the terms of the contract are, by common consent, fair and equitable, and that it will be likely to produce more favourable tenders.

It has already been explained that the interested Government Departments have been in touch with the negotiations that have resulted in the new form of contract, but that they are not committed to its adoption. There are hopes, however, that Government Departments, and likewise local authorities, will recognise not only the general adequacy but also the convenience and economy of a form of contract (with or without modification) that, when the recommendations of the joint conference have been adopted, will be the accepted standard of the authoritative organisations of the architects and the builders.

## The Handbook of Architectural Practice

ISSUED BY THE AMERICAN INSTITUTE OF ARCHITECTS IN 1923.

The Practice Standing Committee have recently been giving further consideration to the *Handbook of Architectural Practice* issued by the American Institute of Architects and at their request the Hon. Secretary of the Committee, Mr. W. E. Watson prepared an analysis of the publication for their consideration. This analysis has now been submitted to the Committee who expressed their warm thanks to Mr. Watson for the time and trouble he had taken in the matter, and as they thought it would be of interest to members generally, and of great assistance and value to the younger members in particular, they decided to publish it in the JOURNAL :—

### ARCHITECTURAL PRACTICE.

Notes prepared at the request of the Practice Standing Committee by W. E. Watson (Hon. Secretary) from the Handbook issued by the American Institute of Architects.

This book does not aspire to treat of Architecture as an art but of the architect as master of the applied sciences necessary to sound and economic building and particularly having regard to professional practice and business administration.

It details the forms of employment of architects under four headings.

(a) Making preliminary studies of the problem up to report or sketch design stage.

(b) Preparation of working drawings and specifications.

(c) Drafting proposal and contract forms, certificates, keeping accounts and carrying on business administration.

(d) Supervision.

The *executive* architect is differentiated from the consulting architect who has probably a wider knowledge of the subject matter and who is paid by the client without deduction from the fee of the executive architect.

Payment is upon three alternative methods :—

1. *Percentage*—minimum, 6 per cent., which is not mandatory—includes conferences, preliminary studies, working drawings and details, drafting of tenders and contracts, keeping accounts, general administration and supervision.

(a) On residential work, alterations to existing buildings, monuments, furniture, decorative, or landscape work, it is proper to make a higher charge.

(b) The architect is entitled to compensation for articles purchased under his direction even although he has not designed them.

(c) Where the architect is not otherwise retained consultation fees for professional advice are payable in proportion to the importance of the matter involved.

(d) Transportation and living costs for architect and staff, payments for services of heating, ventilating, mechanical, and electrical engineers are to be reimbursed.

(e) The basic rate applies only when it comprises one contract. If the work is done under separate contracts, increasing the burden of service, expense and responsibility, an extra rate of usually four per cent. is chargeable.



(f) If after a definite scheme has been approved, the owner makes a decision which for its execution involves extra services and expense for amendments of documents and drawings, or if the contract is cost plus profit, or if the architect be put to expense by delays caused by owner or contractor, including bankruptcy proceedings, fire, or other casualty, he is to be equitably paid for extra services.

(g) Should the work be abandoned or suspended, payment is to be made in proportion to services rendered.

(h) Whether work be executed, suspended or abandoned, payments are due:—

(1.) Upon completion of preliminary studies—20 per cent. based upon a reasonable estimate.

(2.) Upon completion of specifications and general working drawings (not details), a sum sufficient to increase payments to 60 per cent. of proper rates computed upon a reasonable cost or lowest *bona fide* bid.

(3.) During the above periods payments to be made at monthly or other agreed intervals in proportion to the progress made; disbursements also to be at intervals repaid.

(4.) No deduction to be made on account of the use of old materials, penalties or other sums withheld from contractors.

(i) The owner to furnish the architect with complete and accurate contoured survey of the site, giving details of rights, restrictions, easements, boundaries, etc., and full information as to sewers and services, to provide borings and chemical or mechanical tests as required.

(j) Supervision is not continuous personal superintendence, clerk of works to be engaged by architect and paid by owner on presentation of architect's monthly certificate.

(k) Architect will endeavour to keep costs within amount of tender but it is to be regarded as an approximation only.

(l) Documents and drawings prepared by the architect are his property—they are instruments of service whether the work be executed or not.

2. *The fee plus cost method* provides that the architect is re-imbursed the entire cost of the work and in addition is paid a fee or commission as the agreement provides.

(a) Books are kept by the architect showing:—

i. Sums paid to own staff.

ii. Sums paid to consultants and for legal advice.

iii. Disbursements for transportation and living, reproductions, etc.

iv. Overhead office expenses, including rent, light, heat, administrative services, etc.

(b) Architect's account to be rendered monthly.

(c) Owner to decide matters referred to him promptly so as to prevent delay or unnecessary labour.

(d) Full site details to be provided by owner.

(e) Supervision not to be constant; clerk of works if necessary.

(f) Estimates to be regarded as approximation only.

(g) Documents to remain property of architect.

(h) Architect and owner each binds himself, his successors, executors, administrators and assigns to agreement. Architect has right to join in good faith others as parties to agreement. Owner has right to join others without limit as to vocation.

(i) Matters in dispute to be referred to arbitration in writing, one or three arbitrators, majority award; costs to be in discretion.

3. *Salary method.* All expense paid by owner.

*Agreements between Owner and Architect.*—As a verbal agreement is not enforceable in law an agreement in writing is necessary to show clearly and unmistakably what terms are agreed to and when they operate. "The strange timidity that architects display in informing clients of their charges and their willingness to go forward without any understanding whatever are discreditable to them as men of affairs, and such conduct leads to misunderstandings, disputes and litigation."

Forms of agreement embodying many years of experience are given and the principle of offering services "in accordance with the Institute scale of charges" is deprecated because the

scale of charges is indefinite and omits to mention certain important matters.

The forms of agreement define the relations of the parties in many situations not unlikely to arise which should be precisely defined in advance. They represent well-accepted practice and remove details from the realm of debate. They particularly protect public officials as being evidence that they follow well defined professional practice.

*Employment of Consulting Specialists.*—The architects of bygone days designed their buildings in all essentials but with the advance of science in electricity, heating, plumbing, hydrants and mechanics, the architect to-day finds himself in large contracts in a position analogous to that of a general practitioner in medicine: while he is responsible for the work as a whole he must know when to consult with a specialist if he would have every detail reflect the best practice in each special field. Experience shows it is wise to consult the outside professional engineers or specialists, rather than to render directly a service for which he is not fully qualified.

The owner is sometimes surprised when he is called upon to re-imburse to the architect such charges, but they are necessary and the co-ordination of the whole scheme entails prolonged study and ingenuity.

*The Architect's Status.*—The position of the architect is one of trust and confidence, and it is fundamental that he should act in absolute and entire good faith throughout; he must have no pecuniary interest other than that arising out of his agreement with the owner, and he is chosen because he is assumed to possess skill and ability; as a master of the arts he is to violate no canon—he should refuse to be associated with work of unsound character, and even under certain conditions should give up his employment.

*As adviser* he should assist the owner to the best solution of the problem in all its aspects and this relation lasts as long as the agreement runs.

*As agent* he deals with many parties and is subject to the general law of agency unless this is specifically overridden by agreement; he is bound also by the known customs of practice and by the terms of the general conditions of contract which provide:—

"The architect shall have general supervision and direction of the work; he is the agent of the owner only to the extent provided in the contract documents and when in special instances he is authorized by the owner so to act, and in such instances he shall upon request show the contractor written authority; he has authority to stop the work whenever it may be necessary to insure the proper execution of the contract."

As the architect is, in the first instance, the interpreter of the conditions of contract and the judge of its performance he shall side neither with the owner nor with the contractor but shall use his powers under the contract to enforce its faithful performance by both.

In case of the termination of the employment of the architect the owner shall appoint a capable and reputable architect whose status under the contract shall be that of the former architect.

*Decisions.*—The architect shall within a reasonable time make decisions on all claims of the owner or contractor and on all other matters relating to the execution and progress of the work or interpretation of contract documents. The decision of the architect in matters relating to artistic effect shall be final if within the terms of the contract documents.

Except as above or otherwise expressly provided in these general conditions or in the specifications, all the decisions of the architect are subject to arbitration.

*As Judge or Arbitrator.*—Under the general conditions, the architect renders most of his decisions as an arbitrator of first instance subject to appeal under the arbitration clause to a further tribunal.

*The Owner's Duties.*—The owner owes duties to the architect beyond the mere payment of bills and perhaps the most important is asympathetic co-operation without which an architect cannot produce the best work or sustain a devotion to the client's interest.

An owner, while stating clearly his requirements, should frankly express the limit of his purse and should further provide full information on topographical and legal matters so that labour may not unnecessarily be wasted nor the architect's thoughts directed from the solution of a clear-cut problem. The owner should give a thorough consideration to all sketches, drawings, and documents put before him, and if he does not understand them he should confer with the architect till he does grasp the fuller meaning. The owner owes a duty to his architect to make prompt decisions on matters referred to him, and should place the advice of his counsel freely at the disposal of the architect on all matters of a legal character except those where the architect acts in a judicial capacity when he should consult with his own counsel. The owner owes a duty to the architect not to give orders direct to the contractors and thereby he will avoid misunderstandings and confusion as well as charges for extras and, further, will prevent grave entanglements at the time of final settlement. In American Courts it has been decided that where a contract provided that no order was to be valid unless given in writing waiver arose by a verbal order given direct by the owner to the contractor.

Both parties should remain on a good footing throughout if reasonableness, restraint and tact are exercised.

*The Architect's Office* is dealt with in Part 2, page 19.

*Surveys, Studies, Drawings and Specifications*, are dealt with in Part 3, page 41.

*The Letting of Contracts* is dealt with in Part 4, page 49.

*The Execution of the Work* is dealt with in Part 5, page 62.

*The Architect and the Law* is dealt with in Part 6, page 80.

It is difficult to discover from common law and from Statutes the principles governing the relations of architects, owners and contractors; from case law it is still more difficult as these depend upon testimony often obscure and conflicting, upon the intelligence of juries, upon sufficiency of pleadings and upon the wisdom and experience of judges.

*License to Practice.*—State registration has been enacted in 23 states (1923) for the primary purpose of elimination, pretence and incompetence on the constitutional basis of the exercise of police power for protection of the public against unsafe construction, but a broader view of the highest benefit to the public and the profession suggests that physical safety is only one phase of needed protection, or in other words, registration should be regarded as an educational measure, and the Committee has prepared a model form of law for registration (appendix T), with a view to obtaining a desirable uniformity in state registration law and to obtain a uniform plane of educational and technical qualifications.

Non-compliance with registration law may make it impossible for the architect to recover compensation for his services and may prove an offence entailing either statutory or criminal penalties.

*Agreement as to Services.*—When the architect is a litigant his trouble generally arises from a defective agreement or the absence of such. Such cases represent a foolish neglect of fundamental business principles undeserving of sympathy.

They show a reliance upon custom, upon verbal contracts, upon vague memoranda, upon tenders to make drawings, to approval or to receive payments based upon contingencies beyond the architect's control.

The only certain way to avoid such complications is to use a carefully drafted agreement.

*Liability to the Owner.*—The architect must display reasonable skill, ability and honest judgment in designing and superintending the work and in advising his employer, and this entails a responsibility for any incompetence of his assistants.

A denial that the architect has properly performed his duties is the usual defence against a suit for recovery of fees, and in the following cases architects have failed to recover and damages have been granted.

(a) Where the lowest tender or actual cost substantially exceeded the limit of cost.

(b) In public construction work where there was no appropriation or where the contracting officials had no power to contract, or where charter requirements were not fully complied with, or where the appropriation was void because of failure to comply with such requirements, etc., or where the architect was not qualified or was disqualified to accept such public contract.

(c) Where plans and specifications were not delivered within a specified time or were not complete according to contract or custom.

(d) Where the plans and specifications or the buildings constructed therefrom did not fulfil the purpose for which they were designed or were defective in other than minor details.

(e) Where there was wilful omission or departure by the architect from the terms of his employment, or from the directions and instructions of the owner, or from the approved plans and specifications.

(f) Where the plans and specifications or either were prepared in violation of the law or building codes.

(g) Where the supervision was neglected the defects being such as were discoverable by the exercise of reasonable care and skill on the part of the architect.

*Liability to the Contractor.*—The architect owes a duty to the contractor to give honest and fair estimates of work done or certificates for payment at the proper times, he also should give reasonable, honest and timely decisions on all matters within his province, either as agent of the owner or as arbitrator, and he should only give written orders for variations when authorised by the owner to do so. Failure to perform these duties may create a liability to the contractor.

For non-feasance generally the architect is only responsible to his employer, but if he does any lawful act in an unlawful or improper manner he is not only responsible to his employer but also to any injured party.

*Reasonable Skill and Care.*—Cases are recorded where damages for injury and death have been awarded against architects and as his liability is not ordinarily covered by the owner's or contractor's insurances the architect may properly carry contingent liability insurance on his own behalf.

The cases generally show that the architect had failed to show reasonable skill and care either in preparation of documents or in supervision. The law provides that the architect is not bound to the utmost skill such as only a comparatively few attain, but he must show what other architects would consider generally a reasonable degree of professional intelligence and knowledge; the care and attention devoted to the owner's interests ought to be greater than that which he would bestow upon his own affairs of a similar character.

A long series of cases bear upon the meaning of the words "reasonable skill and care," and bear a general interpretation that the architect is not only the guarantor of the perfection of his own work but also of that done by the builder. As the architect is chosen having regard to special qualifications for the work in contemplation and for personal service, he will feel bound to display a degree of skill and care far beyond that sufficient to satisfy the law.

*Liability for Legal Knowledge.*—Architects frequently imagine that something excuses them from a competent knowledge of building law ordinances, etc., but if a lack of knowledge causes the owner damage he has a sure remedy in action, because the Courts take the position that an architect must so design and specify his work that it shall conform not only to statute law and major codes but also to the laws, rules and regulations applicable at the place of building.

*Mechanics' Lien Laws.*—The definition of sub-contractor is as a rule so broad as to include all those who by contract or agreement with the contractor or with his agent have furnished labour or material, and in some cases all who have done work upon the building or have merely hauled material. Even though the owner may have fully discharged his debt to the contractor he may on account of the contractor's failure to pay

his sub-contractors be forced a second time to pay for parts or even the whole of his work, and it is against conditions such as these that the architect should endeavour to defend the owner.

The laws of the several states are very diverse in the matter of liens and the architect will be wise to confer with the owner's Counsel as to the exact language to be used in the various documents.

*Architects' Partnership Agreements* are dealt with in Chapter 41.

*Documents of the American Institute* are dealt with in Part VII.

*Memoranda of Procedure and Progress* are dealt with in Appendix A, and are the administrative acts which an architect has usually to perform in order of their occurrence suggestive of an orderly method to obtain certainty and simplification.

Minutes are suggested of meetings dealing with technical detail one copy to be filed and the duplicate sent to the other interested party, and these are to be used with discretion.

The memoranda is divided into sections :—

i. Deals with preliminary considerations such as partnership, tendering services, employment and expenditures.

ii. Agreements between owner and architect and forms of such.

iii. Preliminary sketches and particulars furnished by owner such as supply mains, architects' survey, building laws, cubage, models, estimates, approvals, charges to date.

iv. Working drawings and specifications, time for preparation, surveys, borings, engineers, experts, form of contract, use of standard documents, general conditions, notes for extra services affecting agreements.

v. Completion of working documents, submission to owner and approval, owners account to date, submission to authorities for tentative approval, whether form of contract or agreement to be submitted to owner's counsel, bonds for sureties, approval of list of bidders, or advertisement.

vi. Tenders received and scheduled, same to owner, examine lists of sub-contractors, advise owner.

vii. Contract between owner and contractor, special clauses signed drawings, delivery of documents.

viii. File contracts, Bill for services, Surety bonds, correct documents and drawings, notifications, schedule of values, clerk of works, experts for testing, change in status of architect.

ix. Detail drawings, schedules, bill for services.

x. During progress, change in contract sum, applications for payments, certificates, information to Clerk of Works.

xi. Completion, provide owner with set of drawings for his file, if it be brought exactly up to date, charge for to be notified and approved, Record copy of all documents for future reference, Final statement. Calculation of architect's overhead charges, directory of those connected with work, chronological record of principal transactions.

*Advice*, as to principles of professional practice and Canons of Ethics is contained in Appendix B, page 108 and the Institute seeking to maintain a high standard of Practice and Conduct in its members as a safeguard of the important aesthetic technical and financial interests entrusted to them advises that the following general principles should be observed.

*On the Architect's Status.*—The architect's relation to his client is primarily that of professional adviser and this relationship continues throughout the entire course of his service. When, however, a contract has been entered into by the terms of which the architect becomes the official interpreter of its conditions and judge of its performance, an additional relationship is created under which it is incumbent upon the architect to side neither with client nor contractor but to use his best endeavour to enforce its faithful performance by both parties. The fact that remuneration for services comes from the client does not invalidate an obligation to act impartially between the parties.

*On Preliminary Drawings and Estimates.*—The architect should impress upon the owner the importance of sufficient time for the preparation of drawings and specifications; it is the duty of the architect to make or obtain preliminary estimates, but he should acquaint the owner of their conditional character and inform him that only from complete and final drawings and specifications can be obtained the more exact figures for contract purposes. If an unconditional limit of cost be imposed before such drawings, etc., are made, the architect must be free to make such adjustments as may seem to him necessary; he should not by bond or otherwise guarantee any estimate or contract because that will usurp his position as a disinterested adviser.

*On Superintendence. Expert Services.*—On all work except the simplest it is to the owner's interest to employ a clerk of works.

In engineering problems and others of a specialised nature it is also to his interest to employ the services of experts and the architect should so inform him. The experience and special knowledge of the architect make it to the advantage of the owner that these persons, although paid by the owner, should be selected by the architect under whose direction they will perform their services.

*On Architect's Charges.*—The schedule of charges is recognised as a proper minimum, locality, nature of the work, quality of service required or particular skill of the practitioner or other circumstances occasionally justify a change from the established practice, but to compete knowingly with a fellow architect on a basis of professional charges is inconsistent with the principle of the Institute.

*On Payment for Expert Services.*—The architect when retained as an expert upon competitions or otherwise should receive remuneration proportionate to the responsibility and difficulty of the services. Such duties are most exacting and the honour of the profession is involved; under no circumstances should there be competition in such remunerations.

*On Selection of Contractors.*—The architect should advise the client in the selection of bidders and in the award of the contract. In advising that none but trustworthy, reliable and competent contractors be invited, the architect protects the interests of the client.

*On Duties to the Contractor.*—As the architect decides whether or not the intent of his plans and specifications is properly carried out, he should take special care to see that these are complete and accurate, and he should never call upon the contractor to make good oversights and errors, nor attempt to shirk responsibility by indefinite clauses in the documents prepared by the architect.

*On Engaging in Building Trades.*—An architect should not directly or indirectly engage in a building trade; if he has any financial interest in any material or device, he should not specify or use it without the knowledge and approval of his client.

*On Accepting Commissions.*—The architect should not receive commission or any substantial service from a contractor, or from any interested person other than his client.

*On Encouraging Good Workmanship.*—The large powers with which the architect is invested should be used with judgment; while he must condemn bad work he should also commend good work; intelligent initiative on the part of craftsmen and workmen should be recognised and encouraged, and the architect should make evident his appreciation of the dignity of the artisan's calling.

*On Offering Gratuitous Service.*—The offering on approval to a client professional services without compensation unless warranted by previous business relations, tends to lower the dignity of the profession and is to be condemned.

*On Advertising.*—Publicity of the standards, aims and progress of the profession both in general and as exemplified by

individual achievement is essential. Advertising of the individual meaning self-laudatory publicity procured by the individual or with his consent is to be deplored.

*On Signing Buildings and Uses of Titles.*—The unobtrusive signature of buildings after completion is desirable; the placing of the architect's name on a building during construction serves a legitimate purpose for public information, but is to be deplored if done obtrusively or for individual publicity.

The use of initials designating membership in the Institute is desirable in all professional relationships in order to promote a general understanding of the standards of the Institute through a knowledge of its members and their professional activities. Upon members devolves a responsibility to associate the symbols of the Institute with acts representative of the highest standard of professional practice.

*On Competitions.*—Architects should not take part in a competition either as jurors or competitors unless it is to be conducted according to the best usage and practice of the profession as evidenced by its having the approval of the Institute.

When an architect has been authorised to submit sketches for a given project no other architect should knowingly submit sketches for it until the owner has taken definite action upon the first as thus a competition is established. Except as an authorised competitor an architect may not attempt to secure work for which a competition has been instituted. Neither may he endeavour to influence an award for which he has submitted a design. He may not if he has acted as a juror directly or indirectly accept a commission to carry out the work.

*On Injuring Others.*—An architect should not falsely or maliciously injure directly or indirectly the professional reputation, prospect or business of a fellow architect.

*On Undertaking the Work of Others.*—A member should not undertake a commission while a claim for compensation or damages by another architect is outstanding unless it has been referred to arbitration or issue at law, or unless there has been neglect in the pressing of the claim, nor should a member attempt to supplant a fellow architect after definite steps have been taken toward his employment. When an architect is invited to deal with a work designed by a confrère he should bear in mind the artistic rights of the author, and where practicable the new design should be submitted to the original architect as a professional courtesy.

*On Duties to Students and Draughtsmen.*—The architect should advise and assist all those who purpose making a career in architecture, and should urge them to take advantage of all available educational facilities; he should encourage all worthy educational establishments and should impress upon all students the utmost importance of a broad foundation of general culture.

*On Duties to the Public and to Building Authorities.*—A member should be mindful of the public welfare and should participate in movements for public betterment, in which his special experience qualify him to act.

He should not even under client's instruction engage in or encourage any practices contrary to law or hostile to public interest.

A member should support all public officials in the performance of their legal duties, and he should comply with all building laws and regulations, and if any appear to him to be unwise or unfair he should endeavour to have them altered.

*On Professional Qualifications.*—The public has a right to expect that he who bears the title of architect has the knowledge and ability needed for the proper invention (delineation) and supervision of all building operations he may undertake, and such qualifications alone justify the assumption of the title of architect.

*Competitions.*—Appendix "C" deals with competitions and gives advice on them, upon the employment of a professional adviser and the form of competition, the qualifications, numbers, anonymity of competitors, the cost of proposed work, the jury of award, the drawings and the programme, the agreement, the remuneration of competitors, the legality of pro-

cedure, the conduct of the parties, and the approval of the Institute. Forms of programme and general conditions follow.

*Fees plus Cost System.*—Appendix "G" relates to the fee plus cost system of charging for professional services to meet special conditions of practice. It entails a fixed professional fee for personal services plus charges for various expenses at cost, and is at once both logical and flexible. The amount of expenses including overhead charges are charged to the owner at cost price. The owner trusts the architect to expend economically the money invested in the building, and will be equally willing to trust him to expend economically and wisely as well as honestly the small amount involved in draughting and other costs.

This system of charging places the architect in a position where he advises the owner on the investment of money without having his professional remuneration affected by the amount actually expended. The adaptability of the system to works of public, private and corporate owners has been demonstrated in actual practice for many years.

*Determination of Fee.*—The fee is determined by the extent of the personal service required. In each case the architect has to consider the extent of service and time over which it will be required as well as the degree of responsibility. No fixed percentage of the cost will determine the fee because the service demanded, say, for a private residence, will be manifestly more exacting in proportion to the expenditure involved than that arising out of a warehouse contract. Each member must, therefore, decide upon his own individual scale what fees are chargeable which would naturally have some relation to his normal annual income under usual conditions if he were working on a percentage basis, having regard to the fact that this remuneration need not be increased to allow for uncertain items which might otherwise arise.

If the agreement becomes modified by conditions beyond the control of the member it should be amended to suit the new conditions arising.

Charges should be rendered monthly during progress.

*General Conditions of Building Contract* are dealt with in Appendix "J," and consist of 45 articles.

*Standard Form of Bond* is dealt with in Appendix "K."

*Agreement between Contractor and Sub-Contractor* is dealt with in Appendix "L."

*Acceptance of Sub-Contractor's Proposal* is dealt with in Appendix "M."

*Agreement between Contractor and Owner.*—A cost plus fee basis is dealt with in Appendix "N," and a description of the system is dealt with in Appendix "O."

W. E. WATSON.

1 Brick Court,  
Temple, E.C.4.  
December, 1927.

The Committee also thought it would be of interest to publish the following *Code of Professional Practice* which was issued by the American Institute of Architects last year:—

#### AMERICAN ARCHITECT'S NEW CODE.

The American Institute of Architects has now given its definite approval to a new code of professional practice. This has been prepared by a committee on ethics, appointed by representatives of the fifty-seven chapters of the Institute spread throughout the United States of America.

The code which has now been made public by Mr. Medary, jur., of Philadelphia, President of the Institute, contains nine canons designed to safeguard the financial, technical and aesthetic interests entrusted to American architects.

The text of the code is as follows:

"The profession of architecture calls for men of the highest integrity, business capacity, and artistic ability. The architect is entrusted with financial undertakings in which his honesty of



purpose must be above suspicion; he acts as professional adviser to his client, and his advice must be absolutely disinterested; he is charged with the exercise of judicial functions as between client and contractors, and must act with entire impartiality; he has moral responsibilities to his professional associates and subordinates; finally, he is engaged in a profession which carries with it grave responsibility to the public.

"These duties and responsibilities cannot be properly discharged unless his motives, conduct and ability are such as to command respect and confidence."

The following nine canons of advice make up the code:

"The relation of an architect to his client is one depending upon good faith. An architect will explain the conditional character of estimates made before final drawings and specifications are complete, and will not by careless statements mislead a client as to the probable cost of a building. If the architect guarantees an estimate he becomes legally responsible, and he should not make any guarantee which affects the quality of his advice.

"The contractor depends upon the architect to guard his interests as well as those of the client. An architect will condemn workmanship and materials which are not in conformity with the contract documents, but it is also his duty to give every reasonable aid towards a more complete understanding of these documents so that mistakes may be avoided. He will not call upon a contractor to make good oversights and errors in the contract documents.

"An exchange of information between architects and those who supply and handle building materials is encouraged and commended, but the use of the free engineering service which is offered by manufacturers and jobbers of building materials, appliances and equipment is accompanied by an obligation which may become detrimental to the best interest of the owner.

"The American Institute of Architects has set forth a schedule or guide by which the proper professional charges may be determined. The architect's charges for his professional service shall be made to the client only, and he will not receive commissions, fees, gifts, favours or any substantial service from a contractor, or from any interested person other than the client. He will not knowingly compete with a fellow architect on a basis of professional charges.

"An architect in his investments and in his business relations outside of his profession must be free from financial or personal interests which tend to weaken or discredit his standing as an unprejudiced and honest adviser, free to act in his client's best interests.

"An architect will not advertise for the purpose of self-laudatory publicity, but publicity of the standards, aims, and progress of the profession is to be commended. He will not take part or give any assistance in obtaining advertisements or other support toward meeting the expense of any publication illustrating his work.

"An architect may introduce to a possible client the service which he is able to perform, but will not, except under unusual circumstances, offer to continue this service without compensation until it has been approved.

"An architect will not falsely or maliciously injure, directly or indirectly, the professional reputation, prospects or business of a fellow architect. He will not attempt to supplant another architect after definite steps have been taken by a client toward his employment; nor will he undertake a commission for which another has been previously employed until he has determined that the original relation has been fairly and properly terminated.

"An architect will take no part in a competition which does not include the provision which experience has found to be necessary if the best interests of the owner and of the architect are to be safeguarded."

## NOTES ON ALTERNATIVE METHODS OF CONSTRUCTION.

PUBLISHED AT THE REQUEST OF THE SCIENCE STANDING COMMITTEE.

It seems that the general opinion of the building industry now is that the traditional methods of small house construction are superior to practically all the alternative methods of construction tried since the War; this is reflected in the tendency to abandon new types and materials and revert to traditional methods in the more recent housing schemes.

While there are a few alternative methods which may be said definitely to possess some advantages over traditional constructions, although perhaps with little or no saving in cost, this reversion is excusable on the grounds that a number of ill-considered "stunt" schemes have insinuated themselves into material form with disastrous results, and that no very marked economy has resulted from the use of alternative systems generally. The chief value of the latter has been that they have relieved the demand for traditional materials when output has been unable to meet requirements and that, with a shortage of traditional craftsmen, it was possible in some cases to use a higher proportion of unskilled labour.

It cannot be maintained for one moment that the traditional forms of house construction are free from defects; there is in fact room for very considerable improvement in details of construction as is evidenced by the fact that complaints from occupants of post-war houses have not by any means been restricted to alternative types. Moreover, the prejudice against anything new in building must also be borne in mind in evaluating the criticism levelled against new methods. Whereas with traditional construction failures have been largely attributable to poor workmanship and materials, alternative methods have suffered more from inherent structural defects. A few examples of defects in alternative types are given below; in some instances they are, of course, the result of lack of foresight, or of an incomplete knowledge of the properties of the materials used, and might be obviated by slight modification in future designs.

The bulk of the alternative systems involve the use of concrete. By far the most important cause of failure in poured concrete work is an inappreciation of the fact that the volume changes in concrete with varying moisture content are considerable. It is therefore necessary to provide for this by suitably arranged contraction joints; failure to do this invariably results in cracking with consequent damp penetration and, if reinforcement is used, corrosion of the metal with resultant disintegration of the concrete.

In pre-cast work, the "moisture movement" factor also enters. It is known that the initial drying of all cement products is of the order of double that of movements due to subsequent wetting and drying. It is therefore of the utmost importance that this initial shrinkage should be complete before the units are incorporated in the structure. This, and, further, subsequent protection from moisture is particularly important where an aggregate which itself is susceptible to moisture changes (such as saw-dust) is employed.



In poured concrete structures, difficulties have arisen in obtaining watertight joints where pre-cast units such as sills and lintels are inserted; at such points much more careful consideration in design is called for than has been expended in many of the concrete alternative systems.

Much trouble has been experienced with permeable concrete blocks. In the effort to obtain rapid output from block-making machines the factors which make for impermeability in concrete have in some cases been sacrificed.

The pier-and-panel type comprises a high proportion of concrete alternative systems; some of this type have turned out much better than others, but the pier-and-panel method is one that can only be economical where a large number of standard houses are to be erected on one site. Any carelessness in the manufacture of the pre-cast units or slight damage during storage or transport means delay during erection. The pier-and-panel and very many other alternative systems which rely on large pre-cast units do not lend themselves easily to æsthetic treatment; it may be said, in fact, that the larger the unit the more restricted is the designer as regards both plan and elevation.

In order to improve the heat-insulating properties of walls, and to avoid condensation troubles in the interior, it has been necessary to utilise porous aggregates, the most readily available being breeze and clinker. Unfortunately, there is at present no rapid means of determining whether these materials are safe for use or not, and their employment is coupled with a certain amount of risk. As the alternative methods make rather more use of clinker and breeze concretes than traditional types, failures due to unsound clinker and breeze aggregate have naturally focussed attention on troubles with alternative methods.

Many alternative systems rely on a shallow reinforced concrete raft as a foundation. A shallow raft can only be satisfactory when properly designed and reinforced. The common practice of inserting a few reinforcing bars in a more or less haphazard manner has, of course, led to trouble in the superstructure on some housing schemes.

While there is no doubt that the cement gun in proper hands is capable of useful work, its use on housing work has not found much favour; accidental stoppages run up the costs and on internal work it is unpleasant to work with. However, a notable failure of "gunite" on metal lathing can hardly be attributed to the means of depositing the mixture, as in all probability a trowel applied rendering would have failed in the same situation. This particular failure appears to have been due to shrinkage cracks (possibly aggravated by the type of reinforcement used) followed by corrosion of the reinforcement.

Turning to clay walling products, the 9 inch or 6 inch interlocking hollow burnt clay block is about the only new development. While affording a cheap means of construction with better heat-insulating efficiency than ordinary brick walls of the same thickness, they require very careful laying to provide a watertight job; the vertical joints particularly require careful workmanship, and a rich mortar mix to ensure watertight conditions.

It must be admitted that no internal finish possessing all the advantages of lime plaster on a solid backing has yet been devised. A very large number of the alternative systems on account of their construction rely on sheet linings. This generally involves the employment of cover fillets with their attendant drawbacks. The volume changes to which practically all these sheetings are subject, with changing humidity conditions, tend to deterioration at the fixing points and to buckling or shrinkage.

A post-war development in ground floor construction, not, by the way, confined to alternative methods, is to lay wood flooring direct on the concrete covering the site. In very many cases, the timber has been attacked by dry-rot fungi within a year. There is danger of rot with all the methods of fixing direct to concrete commonly employed, but some are much less likely to lead to trouble than others and care should be taken that these be used to the exclusion of the doubtful ones.

It is significant that, of the large number of new methods of house construction which, on paper, aimed at the elimination of timber for upper floors and roof, practically all fell back upon it when it came to actual construction.

A word may be added on revivals of the traditional methods which had dropped out of pre-war usage with increased transport facilities. Chief among these are pisé and timber frame walling. The former has been fairly successful where it has been resuscitated, but requires more skill and care than is often supposed. In isolated cases, it may be cheaper than normal methods, but cannot compete with other traditional methods in ordinary circumstances. The well-constructed timber frame house provides a comfortable and perfectly weatherproof habitation, but can only be reasonably employed with due regard for fire risks and on the assumption that the protection of the external timber will be properly maintained.

To sum up the position, generally speaking, new methods are not cheaper than normal methods. Their chief value has been that they have relieved the demand for traditional materials and labour under exceptional conditions, and are not to be unduly encouraged where normal methods are possible.

The experience of an important Housing Trust amply confirms this view. In reply to an enquiry, the Secretary writes:—

"We have tried a number of experiments on our Estate in order to test various methods of house construction. We erected wooden bungalows—pisé de terre bungalows—houses constructed of patent concrete blocks—houses using blocks made of boiler ash and cement—steel houses, and came to the conclusion and were satisfied that we cannot do better than use bricks for houses, both on account of initial cost and on account of subsequent maintenance charges."

In the early part of 1926, a large Corporation in the Midlands invited tenders for several hundred houses with the following results:—

Brick houses, tiled roofs, normal methods of construction, Type "A".....£399 per house.

Concrete houses, tiled roofs, pier-and-panel type,  
£471 per house.

This case is probably exceptional, but generally speaking

the cost of houses of special construction exceeds that of traditional methods by at least 5 per cent.

And then we have the experience of the London County Council, who, in the early part of 1926, considered the steps to be taken for the erection of two blocks of dwellings, comprising, in all, 64 tenements containing 144 rooms with accommodation for 288 persons. They were advised that these two blocks afforded a favourable opportunity of ascertaining definitely whether any economical substitute could be obtained for the type of brick construction usually adopted by the Council for block dwellings. Alternative designs were accordingly prepared, one based on the normal method of brick construction, and the other specially adapted to the requirements of steel and concrete; and for the latter design alternatives of (1) a steel frame with external walling entirely of concrete, and (2) a steel frame with external walling of concrete but with brick facing, were included. In addition to the different methods of construction embraced by the drawings and specification, provision was made to enable prices to be submitted for the buildings if constructed of any special material such as reinforced concrete, or by any special method, the drawings in these cases being regarded as indicative only of the requirements as to equipment and accommodation.

Tenders on this basis were accordingly invited by public advertisement on 21 May, 1926, and were returnable by 12 July, 1926. The undermentioned tenders were received and were opened by the Deputy Chairman of the Council under the authority given on 11 May, 1926:—

A—Normal brick construction.

		£	s.	d.
Lowest tender	.. .. .	21,752	0	0
Highest tender	.. .. .	28,620	0	0

B—Steel and concrete construction.

		For steel frame with external walling entirely of concrete.		Alternative— For steel frame with external walling of concrete, but with brick facing.	
		£	s. d.	£	s. d.
Lowest tender	.. .. .	28,651	0 0	24,442	0 0
Highest tender	.. .. .	34,533	0 0	29,883	0 0

C—Reinforced concrete construction.

		£	s.	d.
Lowest tender	.. .. .	24,762	0	0
Highest tender	.. .. .	28,282	0	0

It will be seen that the lowest tender is £21,752, for buildings of normal brick construction. In every case in which a firm has submitted prices both for brick and steel frame construction, the price for brick construction is considerably lower. The tenders for steel-frame construction show a substantial reduction in every instance if brick facing, instead of concrete throughout, is used for the external walls. The lowest tender for brick construction (£21,752) is equivalent to about £151 a habitable room, for steel frame construction (£24,442) about £170 a room, and for reinforced concrete construction (£24,762) about £172 a room.

## PRESERVATION OF LONDON SQUARES.

The Royal Commission on London Squares held a further public sitting on 10 January at the House of Lords. Lord Londonderry, the Chairman of the Commission, presided.

Mr. E. R. Abbott (Town Planning Institute) said that under the Town Planning Act, 1925, the London County Council could prepare schemes to safeguard the majority of the squares and their surroundings, though some were already protected by Act of Parliament. Under the Act no compensation would be payable in some cases where the squares were surrounded by residences, but the owners would probably co-operate in the schemes. Squares surrounded by streets should be distinguished from internal gardens, which it was essential to keep open. The Town Planning Institute thought it important to keep the squares in their present condition as green oases, and so long as they were surrounded by residential property their private character might well be maintained. It should be possible to safeguard most of the squares without cost to the public. The surrounding property should be governed by a general town-planning scheme for London; if residential, no compensation should be paid; if commercial, compensation should be according to damage inflicted. Replying to questions, he said that he believed that the words of the Act, "architectural, historic, or artistic interest," applied to these squares, and that the property around them should if possible be residential.

Evidence was also given by organisations representing the taxation of land values.

Mr. Maurice Webb, Vice-President of the R.I.B.A., made a statement on behalf of that body. He said that the squares contributed largely to the individuality of London and gave it a pronounced architectural dignity. If the squares were not preserved, London would become increasingly provincial in character and architecturally inferior to many other cities of a metropolitan standing. From an æsthetic point of view it would be a great advantage if, in certain cases, the railings which obscured the view of the grass and flowers could be removed, but it was realised that there were many squares in which, for various reasons, that would not be desirable.

Having referred to the value of open spaces and trees from the point of view of public health in city areas, the witness said the Institute on behalf of which he spoke, considered that it was more economical and logical to preserve the open spaces that now existed than to adopt the extensive scheme of street widenings which would be necessary if buildings were erected on the squares. Legislation for controlling further development of built-up areas was seriously in need of amendment, when compared with the general advance that had been made during the present century in legislative control over land "likely to be used for building purposes." Having regard to the principle contained in the Town Planning Act, 1925, clause 11 (2), where limitation was placed on density and character, without compensation, it would appear equally reasonable and equitable, in areas already built-up, to provide that all open spaces to which the public had had access over a fixed period of years, or which had been used in common by the tenants of adjoining

ing property, should be retained as permanent open spaces.

Replying to questions, the witness said the view of the members of his profession was that the public as a whole had an interest in the squares and that the owners had a responsibility to the community as a whole. From the point of view of compensation, he thought each case should be considered on its merits.

The Commission afterwards sat in private and adjourned.

## Allied Societies

### THE ESSEX SOCIETY OF ARCHITECTS.

The Essex Society of Architects, which originated in Southend a year ago, held its first annual dinner at the Queen's Hotel, Westcliff, on Thursday, 15 December. The President (Sir Charles Nicholson, Bart.), was in the chair, supported by Mr. Walter Tapper, A.R.A. (President, R.I.B.A.), the Secretary, R.I.B.A. (Mr. Ian MacAlister), the Mayor and Mayoress (Coun. and Mrs. A. Bockett), the Deputy Mayor (Coun. W.J. Hockley), the Mayor of Chelmsford, the Deputy Mayor of Colchester, the Archdeacon of Southend (Ven. P. M. Bayne), Rev. E. A. Welch, Ald. H. A. Dowsett, Coun. O. H. Cockrill, Dr. Harmon Morgan, Dr. Charlotte Shields, Mr. and Mrs. Percy Brockbank, Mr. and Mrs. Martin Kaye, Mr. and Mrs. H. R. Cowley, Mr. and Mrs. A. J. Arnold, the Borough Surveyor (Mr. R. H. Dyer), Mr. A. S. Belcham, Mr. George F. Grover, Mr. Percy G. Hayward, Mr. Norman Evans, Mr. Wykeham Chancellor, Mr. Duncan Clark, Mr. J. J. Crowe, Mr. D. H. Burles, Mr. W. G. Beecroft, Mr. J. G. Drysdale, Mr. G. H. Boskett, Mr. A. J. Connabeer, and others.

Proposing the health of the Royal Society of British Architects and kindred societies, the President expressed his extreme gratification that they had the President of that ancient society with them. Nor did he suppose they should be indulging in that social event had it not been for the energy and ability of the Secretary of the Institute, who had acted as their godfather before they were born. Mr. MacAlister now saw before him the fruits of his labours of the past twelve months.

Mr. Walter Tapper, responding, said the Institute dealt with architectural matters affecting not only this country, but the whole of the British Empire. As architects, they owed a great deal to their live Society, and in the course of time he felt sure they would owe a great deal more. He believed it was practically the birthday of the Southend Society of Architects. The President and some of his colleagues came together a little over a year ago and formed the Society, and with tremendous enthusiasm and energy they had done wonders. They numbered in their ranks some 60 members in the architectural sense, but nothing in the records of the Society interested him more—as President of the Royal Institute—than to find what they had done in the way of education. They might rest assured that the future of architecture lay in that direction. They would never get great architecture unless they had men of education to direct them in the proper channel. Therefore, he could really congratulate them upon so rapidly developing a school of architecture—a school which was recognised by the Royal Institute. They were very fortunate, if he might say so, in being able to get as their President his old friend, Sir Charles Nicholson, a distinguished townsman. Sir Charles, as they knew, was an architect of national reputation. His practical interest in architecture was shown by the charming home he possessed in the town. He was consulting architect to various cathedrals, and up and down the countryside they could see work of his, which always gave them a great amount of pleasure.

"Coming to Southend as an infrequent visitor," continued the President, "I have come to the conclusion that there is plenty of scope for a Society of Architects. The town has grown with American rapidity, so much so that there has hardly been time for the townspeople to think about the type of buildings which have to be erected."

He was informed they needed a town hall worthy of themselves, and he was also informed that the School of Art was housed in a temporary building. Well, that ought not to be. That school should be housed in a place of architectural refinement, so that it might be an inspiration to all the students therein.

If they were going to make Southend a place of dignity, they would only get it if the laymen really desired architecture. Great architecture could not come unless the laymen really wished it in their hearts. The architect must also be a man of culture and, in addition to that, have a profound knowledge of his work.

In his view, the spoliation of the countryside was a grave thing. They found the whole of the countryside was being ruined, and it was time they bestirred themselves. There was a Society for the Preservation of Rural England, and he thought it was for their Society to get into touch with them and to endeavour in every possible way to prevent the ugly shacks ruining the countryside. In Manchester they were enrolling the school children for the purpose of keeping the countryside tidy—to clear up the roads after the motorists. He commended that movement because the resulting orderliness very much affected architecture. He claimed that their Society had a refining influence on the whole of the community.

Proposing the "Essex Societies and Architects," the Mayor in the course of his speech said:

"There is a building in Southend to which I have to pay frequent visits, and this one, I suppose, cannot be said to have a beautiful elevation. I don't know if the President of the Society has inspected Southend's municipal offices, but if he has I would very much like to know what he thought of them. It always seems to me as I approach them that I am entering the offices of a Board of Guardians to seek outdoor relief. I can assure you all that the Corporation are wholly dissatisfied with the accommodation they possess, and are determined that at the earliest opportunity a town of the size of Southend, with a great rateable value and still developing, shall have municipal offices worthy of a great city."

Mr. Wykeham Chancellor responded.

Proposing the Mayor and Corporation of Southend, Mr. J. G. Drysdale pointed out that the town planning scheme left Southend itself untouched. High Street, for instance, had been built and rebuilt at a cost of thousands of pounds, and still it was not possible to call it a thoroughfare with any continuity of character.

Replying, Ald. Dowsett acknowledged that it was the fear of a rise in the rates which had kept back the project of the town hall. The Mayor, when Chairman of the Finance Committee, had always been impressing upon them the necessity of economizing, but now in the matter of the town hall he was pleased to welcome him as a convert. The Southend arterial road was one of the most horrible of their thoroughfares, because of the sheds and refreshment huts local authorities were allowing to be erected. It only proved that when arterial roads were constructed, the Ministry of Transport should take powers to deal with the erections which were to abut upon it.

As to the erection of houses, he would like to see a law passed prohibiting anyone building a house unless it was designed by an architect, and no one should be allowed to practice as an architect unless he had passed the necessary examinations.

Mr. Duncan Clarke proposed the Visitors and Mr. J. Crowe the President.

## GLOUCESTERSHIRE ARCHITECTURAL ASSOCIATION.

An exhibition of the Royal Institute of British Architects' prize drawings and of recent work by Gloucestershire architects, was opened in Cheltenham Art Gallery on 6 December by the Mayor of Cheltenham (Alderman C. H. Margrett). The President of the Gloucestershire Architectural Association (Major H. Stratton Davis, M.C., F.R.I.B.A.) was in the chair. Also on the platform were Major-General Sir Fabian Ware, K.C.V.O., K.B.E., C.B., C.M.G., and Mr. Walter Tapper, A.R.A., president of the Royal Institute.

The Mayor declared the exhibition open. Interest in local architecture, he said, had been revived in Cheltenham by the action of the Civic Society. It was the aim of the local architects to preserve the traditional style as well as to combine it with modern methods.

General Sir Fabian Ware dealt with the devastation of the Cotswolds, from where came the same story as from all over England. While our architects were carrying on the great work of reconstruction in the devastated area of Belgium, our own countryside was being destroyed. The Belgians had completely restored that part of the country, and had adhered to the traditional materials and style of architecture which had existed before, and they were replanting their woods.

In the Cotswolds the beechwoods were being felled, stone tiles were being torn off ancient barns and buildings to be sent to the United States of America, where they were used to roof American buildings. If he said all he would like to say about one special transaction of that nature, which took place recently, he would find himself open to a libel action. Not only were the tiles being torn down, but they were being replaced at the best by asbestos tiles, and generally with corrugated iron, painted red. Within a radius of five miles from his own cottage he could show them barn after barn on which the tiles had been replaced in the manner he had stated. It only wanted a few more for the whole of that upland to be destroyed as far as the buildings were concerned, both in colour and form. They had those ribbons of red and terrible bungalows stretching out along the roads, and they had the whole countryside flooded with garish petrol pumps and advertisement hoardings. It was impossible for him to describe the appalling change taking place throughout the Cotswolds. Was there nothing they could do to stop the rot, which was spreading with dangerous swiftness. The devastation was increasing to such an extent that there might soon be an outburst of feeling in the country which would make it impossible for the Government to refuse legislation, but in the meantime he hoped they would do everything to support the work of the Council for the Preservation of Rural England, and that there would come such a strong expression of opinion from the Cotswolds, supported by those who lived in the neighbourhood, that they would find appointed a body of architects and others (which would be popular as well as technical), who would be willing, free of cost, to give advice in regard to all new building schemes and in regard to the preservation of old buildings.

Mr. Walter Tapper also spoke to the same effect.

## Obituary

J. A. T. HOUSTON [F].

Mr. J. Houston, a principal architect on the staff of the City Engineer, Glasgow, met with a serious motor car accident while carrying out his official duties, on 19 December, and died shortly afterwards as a result of his injuries.

Mr. Houston was 49 years of age and was 26½ years in the service of the Corporation of Glasgow. He received his earlier training in the office of Messrs. Honeyman & Keppie,

now Messrs. John Keppie & Henderson; afterwards in the office of the late Sir Rowand Anderson; and before taking up the appointment in the Engineer's Department, he served with Sir John James Burnet, R.A., architect.

Mr. Houston was an architect of exceptional ability, evidence of which is apparent from many of the Corporation buildings, including hospitals, sanatoria, etc., erected more especially under his supervision.

In collaboration with Mr. R. W. Horn, Associate of the Institute, he was successful in the open competition in securing a place in the limited competition for the London County Council Hall.

In 1915 he was commissioned in the Royal Engineers, and in 1919, on demobilisation, he held the rank of Captain. Mr. Houston was elected a Fellow in 1921.

## JOHN JACKSON [F]

Mr. John Jackson, a Bradford architect, who died at the age of 71, on 25 September, 1927, was very well known in his profession. He designed many large buildings in the city of Bradford, and his work extended to Manchester and many other places. Among the buildings designed by him was the handsome block erected by the Baptists of Heaton, Bradford.

## The Examinations

DECEMBER 1927.

*The Final Examination.*—The Final Examination qualifying for candidature as Associate R.I.B.A. was held in London and Edinburgh from 7 to 15 December 1927.

Of the 48 candidates examined (four of whom took Part I only and one Part 2 only), 23 passed (three in Part I only and one in Part 2 only), and 25 were relegated.

The successful candidates are as follows :—

Benham, Helen M.  
Brown, H. J.  
Byers, John.  
Chapman, E. W. (Distinction in Thesis).  
Cohen, Jacob.  
Dain, Cecil.  
Edwards, D. T. (Part 2 only).  
England, N. R.  
Gardiner, K. E. F.  
Garthside, Eric.  
Gough, G. C. P.  
Hatcher, B. A. (Part 1 only).  
Hobday, Ralph.  
Jeffrey, John.  
Lloyd-Thomson, Stewart.  
Mowbray, W. B. (Part 1 only).  
Paterson, E. A.  
Phillips, R. A.  
Robertson, G. W.  
Saise, A. J.  
Sherren, B. C.  
Tatam, Reginald (Part 1 only).  
Weir, W. G.

*The Special Examination.*—The Special Examination qualifying for candidature as Associate R.I.B.A. was held in London from 7 to 13 December 1927.



Of the 19 candidates examined (two of whom took Part 1 only and one Part 2 only), 8 passed (one Part 1 only) and 11 were relegated.

The successful candidates are as follows :—

Childs, W. C.  
Farman, A. L.  
Garrett, A. J. W. (Part 1 only).  
MacGeagh, John.  
Morgan, R. G.  
Stackhouse, E. S.  
Waterman, Frederick.  
Watson, C. S. O.

*The Examination in Professional Practice for Students of Schools of Architecture recognised for exemption from the R.I.B.A. Final Examination.*—The Examination was held in London and Edinburgh on 13 and 15 December 1927. Of the 35 candidates examined 30 passed and 5 were relegated.

The successful candidates are as follows :—

Armstrong, F. B.	Lipp, Alexander.
Beale, E. H.	*Maitland, R. W.
Brinton, W. R.	McGrath, Raymond.
Bull, H. A. H.	Mirams, D. G.
Chippindale, Frank.	Rigg, Mary F.
Crawford, D. L.	Scott, Mary F.
Crickmay, C. R.	*Smart, G. D.
*Day, R. F. R.	Stokes, L. G.
de Quincey, M. A.	Trubshawe, W. V.
Drury, H. M. R.	Varcoe, L. C. F.
Ellerton, E. M. K.	Walker, R. M.
Ellis, M. F. R.	Walker, S. T.
*Forbes, Ian.	Ward, B. R.
Hamilton, J. V.	*Westendarp, R. T.
Kendall, Henry.	Wilkinson, Mary L.

\*These candidates have not yet completed School course.

*The Special Examination in Design for former Members of the Society of Architects.*—The Special Examination in Design for former Members of the Society of Architects to qualify for the Associateship R.I.B.A. was held in London from 7 to 12 December; of the 3 candidates examined 1 passed and 2 were relegated.

The successful candidate is as follows :—  
Buchan, W. J.

#### R.I.B.A. EXAMINATIONS.

NOVEMBER AND DECEMBER 1927.

The questions set at the Intermediate, Final and Special Examinations held in November and December 1927 have been published and are on sale at the Royal Institute, price 1s. 6d. (exclusive of postage).

## Notices

### THE SEVENTH GENERAL MEETING.

The Seventh General Meeting (Business) of the Session 1927-28 will be held on Monday, 6 February 1928, at 8 p.m., for the following purposes :—

To read the Minutes of the General Meeting (Ordinary) held on 23 January 1928; formally to admit members attending for the first time since their election.

To proceed with the election of the candidates whose names were published in the JOURNAL for 14 January 1928 (pp. 166-7).

To announce the names of candidates nominated by the Council for election to the various classes of membership.

To announce the Council's nomination for the Royal Gold Medal, 1928.

### INFORMAL DISCUSSION OF MATTERS OF PROFESSIONAL INTEREST.

At the conclusion of the above Business Meeting there will be an informal and private discussion of matters of current professional interest or concern. Members are invited to bring up for discussion, with or without notice, subjects of professional interest or difficulty.

### ELECTION OF MEMBERS.

Associates who are eligible and desirous of transferring to the Fellowship class are reminded that if they wish to take advantage of the election to take place on 4 June 1928, they should send the necessary nomination forms to the Secretary R.I.B.A. not later than Saturday, 17 March 1928.

### LICENTIATES AND THE FELLOWSHIP.

The attention of Licentiates is called to the provisions of Section IV, Clause 4 (b) and (c ii), of the Supplemental Charter of 1925. Licentiates who are eligible and desirous of transferring to the Fellowship can obtain full particulars on application to the Secretary R.I.B.A., stating the clause under which they propose to apply for nomination.

### ROOMS FOR ARBITRATIONS, ETC.

Members requiring convenient accommodation for Arbitrations, Conferences, Committees, Lectures (Lantern if required) or other similar meetings, will find every facility available at the additional premises at 28 Bedford Square, W.C.1. Telephone : Museum 0942. Enquiries should be made of Mr. C. McArthur Butler [L.], who has charge of the arrangements.

### ARCHITECTS, ENGINEERS, AND SURVEYORS DEFENCE UNION, LIMITED.

It would seem that the circular "A" issued by the Defence Union containing information relating to its objects has conveyed to some members of the Institute the idea that the Union is an organisation formed outside of, and in some way in rivalry with, the R.I.B.A. Possibly this is due to the fact that the Union is a separate body and that its offices are at 28 Bedford Square and not at Conduit Street.

However this may be, the Council of the R.I.B.A. desires to remove any misapprehension and to state that the Architects, Engineers and Surveyors Defence Union, Limited, was formed under the auspices of and with the sanction and support of the R.I.B.A., and has permission to indicate this in its circulars.

The Council of the R.I.B.A. urges all eligible members of the Institute who have not yet joined the Union to do so without delay and as a matter of course, not only in their professional interests, but with the object of establishing firmly a Defence organisation founded by members of the Institute and carried on under the auspices of and with the hearty support and approval of the Council.

All communications relating to the Defence Union should be addressed to 28 Bedford Square, London, W.C.1, where accommodation has been placed at its disposal by the Council of the Institute.



## Competitions

### PROPOSED NEW SENIOR ELEMENTARY SCHOOL AT BIRKDALE.

The Education Committee of the County Borough of Southport invite architects practising in the United Kingdom to submit designs in competition for a new senior elementary school at Birkdale. Assessor: Professor S. D. Adshead, M.A. [F.]. Premiums, £100, £75 and £50. Last day for questions, 31 December 1927. Designs to be sent in not later than 10 March 1928. By applying to the Director of Education, Municipal Offices, Southport, and enclosing 10s. 6d., conditions of the competition may be obtained.

### WHITBY U.D.C. LAY-OUT COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

### NARROW STREET IMPROVEMENT, PETERBOROUGH.

The Corporation of the City and Borough of Peterborough invite architects to submit schemes and designs in competition for the erection of municipal offices, shops, private offices, and other buildings proposed to be built on a site in Narrow Street.

Total cost not to exceed £200,000.

Assessor: Sir Reginald Blomfield, R.A. [F.].

Premiums: 500 guineas, 250 guineas and 150 guineas.

Last day for sending in designs, 29 February 1928.

Conditions of the above competition may be obtained from the Town Clerk, Town Hall, Peterborough, by depositing £1 1s.

### MUNICIPAL COLLEGE OF TECHNOLOGY, MANCHESTER.

The Corporation of the City of Manchester invite architects to submit designs in competition for an extension of the College of Technology proposed to be erected on a site adjoining the present College of Technology building in Sackville Street and Whitworth Street, Manchester.

Last day for questions, Saturday, 10 December 1927.

Assessors: Messrs. Alan E. Munby, M.A. [F.], Henry M. Fletcher, M.A. [F.], and Francis Jones [F.].

Premiums: £500, £400 and £300.

Designs to be sent in not later than 5 p.m. on Friday, 30 March 1928.

For conditions apply to the Town Clerk, Town Hall, Manchester, and deposit £1 1s.

### SEATON LAY-OUT COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

### 50TH (NORTHUMBRIAN) DIVISIONAL MEMORIAL, WIELTJE, BELGIUM.

The competition is strictly limited to architects who served overseas with any unit of the 50th (Northumbrian)

Division during the war. Assessor: Col. A. Easton [F.]. The memorial is to take the form of a monument situated on slightly elevated ground at the east corner of the junction of Oxford Road and the Ypres-Passchendaele Road at Wieltje. Premiums: £30, £20 and £10. The cost is limited to £2,000. Last day 31 January 1928. Conditions from Lt.-Col. Wm. Anderson, New Market Street, Newcastle-upon-Tyne, by depositing 10s. 6d.

## Members' Column

### MESSRS. SWAN, NORMAN AND CLAY.

MESSRS. SWAN AND NORMAN, of 8 Clifford's Inn, E.C.4, have taken into Partnership, Mr. Felix Clay, M.A., F.R.I.B.A., late Architect to the Board of Education. The practice will be carried on at the same address under the title of Swan, Norman and Clay.

### APPOINTMENTS VACANT.

WANTED Senior Assistant used to and capable of carrying out large jobs. Must be absolutely first-class man. Give age, experience, etc.—Reply Box 6192, c/o The Secretary R.I.B.A., 9 Conduit Street, W.

ASSISTANT required by firm of Architects in Malaya. Salary £700 per annum, with annual increment of £25. Four years' agreement, with first-class passage out and home. If agreement is renewed, six months' full pay leave will be granted with first class return passage. Permanency with excellent prospects for a suitable man. Only thoroughly competent and fully qualified architectural assistants need apply. Age 25 to 35, single. Applicants must be quick at modern design, and be able to prepare perspective sketches. A sound knowledge of reinforced concrete and steel frame construction, with calculation, is essential, and applicants must have had experience and be able to take charge of large and important buildings.—Apply Box 1618, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1, not later than 25 February.

LEARNER ARCHITECT [F.] is open to take pupil or advanced student into his office immediately for practical experience in town work of interest and educational value.—Apply Box 1297, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

### OFFICE ACCOMMODATION WANTED.

A.R.I.B.A., with a small practice, is seeking a London office, and would like to share accommodation with another architect.—Apply Box 2418, c/o The Secretary R.I.B.A., 9 Conduit Street, W.1.

FELLOW of the Institute desires to meet another Architect with a view to sharing office accommodation and running expenses.—Apply Box 7474, c/o The Secretary R.I.B.A., 9 Conduit Street, W.1.

### OFFICE ACCOMMODATION.

FELLOW of the Institute, with an office in the West End, desires to meet another Architect with a view to sharing accommodation and running expenses.—Apply Box 2118, c/o The Secretary R.I.B.A., 9 Conduit Street, W.1.

F.R.I.B.A. has large light room to let—Gray's Inn. Share of assistant for typing and tracing, etc., can be arranged.—Apply Box 2312, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

MEMBER has one, two, three or four spare rooms in his house in Baker Street. Office facilities as required. Could be used as residence with own bathroom. Reply, Box 6206, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

### COMMENCEMENT OF PRACTICE.

MR. J. GODDARD WILSON [F.], has commenced practice at No. 33 Dorset Square, London, N.W.1.

## Minutes VIII

### SESSION 1927-28.

At the Sixth General Meeting (Ordinary) of the Session 1927-28 held on Monday, 23 January 1928, at 8.30 p.m.

Mr. Walter Tapper, A.R.A., President, in the Chair.

The attendance book was signed by 18 Fellows (including 10 Members of the Council), 16 Associates (including 2

Members of the Council), 4 Licentiates (including 1 Member of the Council), 1 Hon. Fellow, 1 Hon. Associate, and several visitors.

The Minutes of the Meeting held on 9 January 1928, having been published in the JOURNAL, were taken a read, confirmed and signed as correct.

The Hon. Secretary announced the decease of—

Mr. Thomas Hardy, O.M., who was elected an Hon. Fellow of the Royal Institute in 1920. Mr. Hardy was awarded the Silver Medal of the Institute in 1862 for his Essay on "The Application of Coloured Bricks and Terra Cotta to Modern Architecture."

And it was Resolved that the regrets of the Institute for his loss be entered on the Minutes and that a message of sympathy and condolence be conveyed to his relatives.

The following members attending for the first time since their election were formally admitted by the President:—

Mr. Patrick McNeil [A.].

Mr. Alfred Godwin Geeson [A.].

The President having delivered the Annual Address to Students, a vote of thanks was passed to him by acclamation on the motion of Mr. R. F. Cholmeley, C.B.E., M.A., seconded by Professor W. Rothenstein, M.A., Principal of the Royal College of Art.

The Presentation of Prizes was then made by the President as follows, in accordance with the award:—

*The R.I.B.A. Tite Prize. A Certificate and £50.*—The Tite Certificate to Mr. Patrick McNeil, A.R.I.B.A. (Glasgow School of Architecture).

*The R.I.B.A. Soane Medallion. A Silver Medal and £150.*—The Soane Medallion to Mr. Leonard W. T. White, A.R.I.B.A. Certificates of Hon. Mention to Mr. George Albert Goldstraw (School of Architecture, Victoria University, Manchester); Mr. James Barrington Wride, A.R.I.B.A. (School of Architecture, Technical College, Cardiff); Mr. John Trevor Lloyd (School of Architecture, University of London).

*The R.I.B.A. Grissell Gold Medal and £50.*—The Grissell Gold Medal and cheque for £50 to Mr. Alfred Godwin Geeson, A.R.I.B.A. (School of Architecture, Leicester College of Arts).

*The R.I.B.A. Silver Medal and £75 for Measured Drawings.*—The Silver Medal and cheque for £75 to Mr. Frederick William Charles Adkins (Regent Street Polytechnic School of Architecture).

*The R.I.B.A. Silver Medal and £50 for an Essay.*—The Silver Medal and cheque for £50 to Mr. Vernon Constable, A.R.I.B.A. (Glasgow and West of Scotland Technical College).

*The R.I.B.A. Alfred Bosson Travelling Studentship. Gold Medal and £250.*—The Gold Medal and a Silver Medal to Mr. Patrick Cutbush, A.R.I.B.A. (Architectural Association School of Architecture). Silver Medals to Mr. John Robert Moore, A.R.I.B.A., Mr. Roderick Nelson Guy, A.R.I.B.A. (Regent Street Polytechnic School of Architecture), Mr. Charles Thomas Bloodworth, B.Arch. Liverpool, A.R.I.B.A. (School of Architecture, University of Liverpool).

*The R.I.B.A. Ashpitel Prize. 1927. Books to the value of £10* to Mr. John Gains Laskie, A.R.I.B.A. (Glasgow School of Architecture).

*The R.I.B.A. Silver Medal for Students of Schools of Architecture recognised for exemption from the Final Examination* to Mr. William Ralph Brinton (Architectural Association School of Architecture).

*The R.I.B.A. Bronze Medal and Books to the value of £5, for Students of Schools of Architecture recognised for exemption from the Intermediate Examination*, to Mr. Allan Johnson (Leeds School of Architecture).

The President introduced to the meeting the successful candidates for the following Scholarships and Prizes awarded in 1927 and presented them with Certificates:—

*The R.I.B.A. Archibald Dawnay Scholarships.*—Mr. Gilbert Robert Beveridge (Architectural Association School of Architecture) and Mr. Walter Geoffrey Plant (School of Architecture, University of Liverpool).

*The R.I.B.A. Howard Colls Studentship at the Architectural Association.*—Mr. Alexander George Gibson.

*The R.I.B.A. Donaldson Silver Medal at the Bartlett School of Architecture, University of London.*—Mr. Alfred Charles Light.

*The R.I.B.A. Maintenance Scholarship in Architecture.*—Mr. John Frederic Duncan Wylson (Architectural Association School of Architecture).

The proceedings closed at 9.20 p.m.

## The Architects' Benevolent Society

### HOUSE PURCHASE SCHEME.

It is the ambition of many men to acquire a house for themselves, and the Architects' Benevolent Society's Scheme of House Purchase makes it possible to obtain the necessary capital on equitable terms without using up existing securities or business capital, purchase being made out of income. The arrangement is carried out by means of a loan of not more than 75 per cent. of the certified value secured upon the house with an endowment policy to provide for its repayment. Its chief advantages are as follows:—

- (1) Provision for dependents. In the event of your death, the loan is automatically discharged and the house released to your dependents free of debt.
- (2) Special concession. In the case of houses in course of erection 50 per cent. of the loan will be advanced when the roof is on and the house covered in, subject to the approval of the mortgagees.
- (3) Flexibility. If you desire, you can make periodical repayments on account of the loan, when the annual cost will be adjusted.
- (4) Saving. The cost will be found less burdensome than the payment of rent and is only payable for 20 years at the most.

N.B.—(1) This scheme is now extended to those outside the architectural profession, provided that the house has been designed and the applicant introduced by a member of the Institute.

(2) Loans are not granted in respect of property which does not warrant a loan of at least £500; nor for property other than for the proposed borrower's occupation. Property of which the value exceeds £4,500 and property of the bungalow type are excluded.

Please address all enquiries to the Secretary A.B.S., 9 Conduit Street, London, W.1.

It is desired to point out that the opinions of writers of articles and letters which appear in the R.I.B.A. JOURNAL must be taken as the individual opinions of their authors and not as representative expression of the Institute.

### R.I.B.A. JOURNAL

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